

3·2·1·Contact®

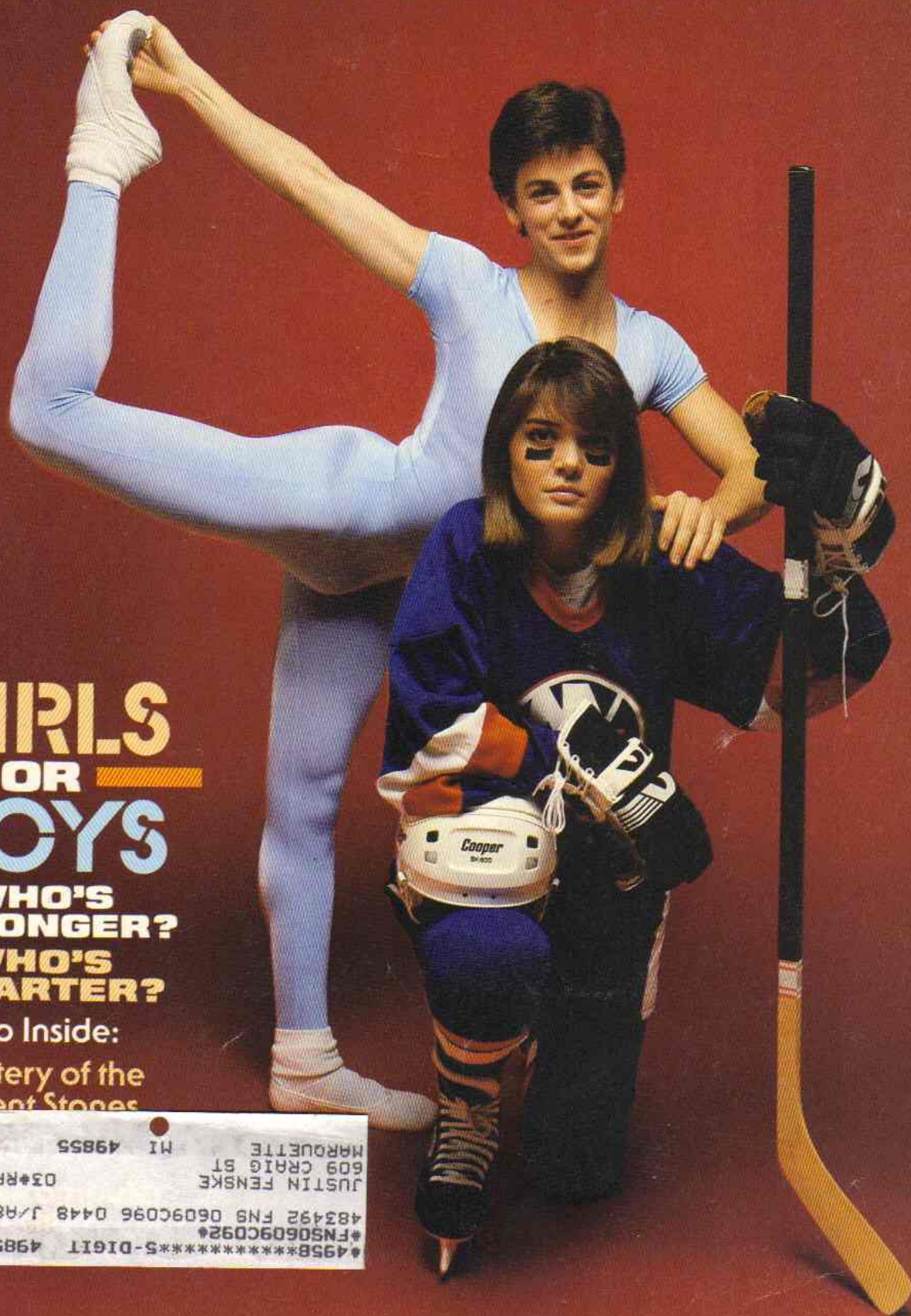
GIRLS OR BOYS

WHO'S
STRONGER?
WHO'S
SMARTER?

Also Inside:

- Mystery of the Ancient Stones

4958*****S-DIGIT 49855
#FNS0609CD92#
483492 FNS 0609C096 0448 J/A87
JUSTIN FENSKE
609 CRAIG ST
MARQUETTE MI 49855
03#RF



BETCHA BITE A CHIP

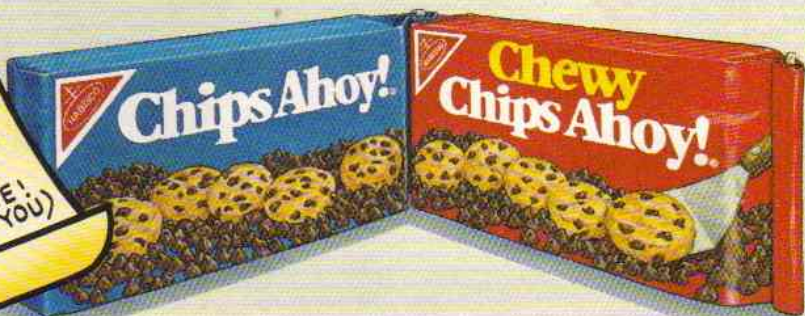
with
Chips Ahoy!

THERE ARE SO MANY CHOCOLATE CHIPS IN A CHIPS AHOY! COOKIE, IT'S IMPOSSIBLE TO BITE A COOKIE WITHOUT BITING A CHIP. SEE IF YOU CAN "EAT" YOUR WAY THROUGH THIS MAZE, "BITING" INTO AS FEW CHIPS AS POSSIBLE.



BETCHA BITE A CHIP SCALE

- 5 OR MORE - YOU BIT A MOUTHFUL (TRY AGAIN)
- 4 CHIPS - CHOCOLATE MUNCHER
- 3 CHIPS - NOT A BAD BIT O' BITING, BUDDY
- 2 CHIPS - CHOOSY CHEWER
- 1 CHIP - CHIP SKIPPER
- 0 CHIPS - IMPOSSIBLE! (WE TOLD YOU)



Publisher

Nina B. Link

Editor

Jonathan Rosenbloom

Art Director

Al Nagy

Senior Editor

Richard Cheval

Managing Editor

Aura Marrero

Associate Editors

Russell Miller

Ellen Rudolph Mednick

Assistant Art Director

Jo Lynn Alcorn

RESEARCH

Research Director/Publications

Dr. Istar Schwager

Field Research Coordinator

Tony Wilsdon

BUSINESS

Vice President/General Manager

Bill Hitzig

Business Manager

Julie K. Andersen

Circulation Director

Kathleen O'Shaughnessy

Promotion Manager

Elizabeth McNamara

Subscription Manager

June Wick

Production Director

Carlos N. Crosbie

Production Manager

Bill Santana

ADVERTISING SALES

Advertising Director/Magazine Group

Al DiGuido

Advertising Sales Managers

Gail DeLott

Lori Beck Golden

Advertising Representatives

Jill H. Rosenberg

Karen Siegel

Advertising Coordinator

Nancy C. Stewart

ADVISORS

Dr. Gerald S. Lesser

Professor, Harvard Graduate

School of Education

Dr. Charles Walcott

Director, Lab. of Ornithology,

Cornell University

Dr. Jearyl Walker

Professor of Physics,

Cleveland State University

Dr. Charles A. Whitney

Professor of Astronomy,

Harvard University

ADVERTISING SALES OFFICE

Al DiGuido

Advertising Director/Magazine Group

3-2-1 Contact Magazine

1 Lincoln Plaza

New York, NY 10023

(212) 595-3456



Winner/National Magazine Award
General Excellence



Award Winner/Feature Category

3-2-1 Contact (ISSN 0195-4105) is a publication of the Children's Television Workshop, published ten times during the year, monthly except for February and August. © 1986 Children's Television Workshop. All rights reserved. All contents owned by the Children's Television Workshop and may not be reprinted without permission. 3-2-1 Contact is a trademark and a service mark of the Children's Television Workshop. Printed in the U.S.A. Number 75, April, 1987. Editorial offices: One Lincoln Plaza, New York, N.Y. 10023. Application to mail at second-class postage rates is pending at New York City and additional mailing offices. Send subscription orders to 3-2-1 Contact, P.O. Box 2933, Boulder, CO 80322. POSTMASTER: Send address changes to 3-2-1 Contact, P.O. Box 2933, Boulder, CO 80322 (including label from cover of magazine). Subscriptions: 1 year U.S.A. \$11.95; Canada and other countries add \$6. Bulk copy rates to schools and other institutions available on request.



3-2-1-Contact



Page 2

Page 16



Page 39



Page 34



Featuring This Month

4 Boys or Girls: Who's Stronger? Who's Smarter?

10 Funny Farms

16 Secrets from the Ancient Stones

20 Maya Match

26 Super Spring Special

28 Listening Tube

38 Growing Crystals

33 Fractured Flowchart

34 Basic Training

Plus Our Regular Departments

2 TNT: Tomorrow's News Today

14 Any Questions?

21 The Bloodhound Gang

24 Factoids

36 Extra!

39 Mail

40 Did It!

ENTER: The High-Tech World of Computers

29 Color Maze

30 Reviews

32 The Slipped Disk Show

Cover Photo, Nick Koudis, Photography

Room To Eat

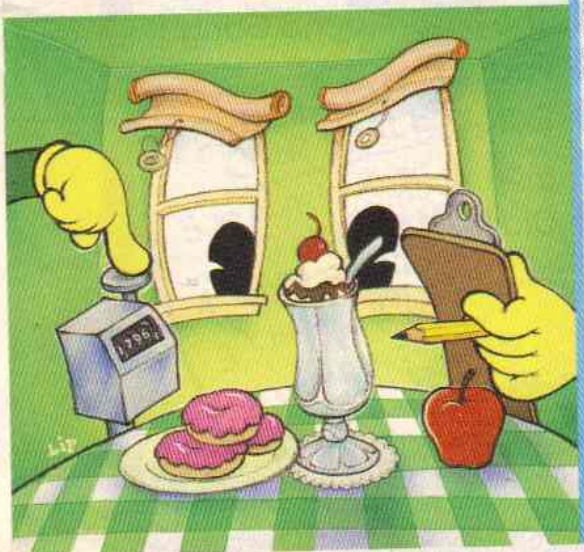
Some skinny people can't seem to gain weight. And some pudgy folks can't lose it. Why? A high-tech dining room in Maryland may hold the answers.

It's called a "calorimeter." It looks like a small bedroom, with 16,000 electronic thermometers built into its walls. It's built to do one thing: count calories.

Food is your body's fuel. Calories measure the energy supply in food. They also measure the energy you use working, playing and, of course, eating. That's where the calorimeter comes in.

One at a time, people will spend a few hours—or a few days—living in the calorimeter. Scientists will keep track of what they eat and what they do—from watching videos to running on a treadmill. The calorimeter will measure the heat they give off.

All this information will help scientists figure out how many calories the people ate and how many they worked off—the first steps toward understanding why different bodies do different things with the same old chow.



Loon Tunes

The weird yodeling song of the loon is helping scientists keep those water birds alive.

In the northeast United States, loons used to nest as far south as Pennsylvania. Now there are none south of Massachusetts. Experts want to know why.

The first step is keeping track of individual birds. To tell birds apart, scientists usually catch them, fasten small bands to their legs, and set them free. But it's hard to catch loons.

A New Hampshire group called the Loon Preservation Committee came up with a new method. They tape-record male loons' late-night yodels. Then they make voice prints of the taped yodels.

Each loon has its own voice print. By comparing the prints from year to year, loon-watchers can learn a lot—like how often the same bird returns to the same nesting lake, how long loons live and why certain lakes stop attracting loons.

With loon-lovers listening, loons' loopy laughter may help the birds last longer.

Her Own Comet

Christine Wilson may not be a star, but she's got her own comet. It's visiting Earth this month.

Christine, an astronomy student at the California Institute of Technology, was looking at telescope photos last August when she noticed an unusual streak—a new comet!

After April 30, it may be 1,000—or 1,000,000—years before Comet Wilson returns to Earth. Meanwhile, the comet may shine more brightly than Halley's Comet did last year. That's because, unlike Comet Halley, it will be closest to the sun at the same time it's close to Earth.

The bad news is: Comet Wilson will only be visible south of the equator. So you probably won't be able to see it. But you can bet Christine Wilson will!



Smoke Out

Who says kids can't make a difference? Back in 1984, seventh graders in Sandwich, MA became concerned that many kids use tobacco without understanding how unhealthy it can be. They began working for a law against selling tobacco to young people.

They talked to local leaders, wrote letters and even went to the state capitol to meet with lawmakers. And it worked. A year later, Massachusetts had the tough new law the kids fought for.

Those kids are in high school now, but Sandwich's new seventh graders are keeping up the fight. They're working to keep kids tobacco-free across the whole U.S.

Joystick Ride

Imagine driving a car with only one hand. A Colorado company has built a special joystick that lets drivers do just that.

A driver moves the Unistick from side to side to steer the car. Pulling the stick backward slows the car down. Pushing it forward gives it the gas. Push buttons control the gears. So drivers don't need to use their legs at all.

Jerry Polson, one of the engineers who designed the Unistick, told CONTACT, "It's more fun to drive with a joystick than to drive normally." It's more than fun, though. Since it only takes one hand to use a Unistick, the new invention will allow handicapped people to drive.



Fizzy Milk

One day soon, you'll come home, open the fridge, pop open an icy bottle and pour yourself a glass of refreshing, bubbly, sparkly—milk!

Scientists in Illinois are working on a process to carbonate milk. That means they're bubbling carbon dioxide gas into moo juice, the same way soda-pop-makers bubble the gas into water to make soft drinks.

Carbonated milk will come in lots of flavors—just like pop. So far, researchers have tested out cola and fruit flavors, and they say they're just dandy. It quenches thirst just fine, they say, and it doesn't leave a milky mustache.

Speedy Wheels

Can your bike move as fast as a car? It could if you were riding a two-wheeler called "Gold Rush." Gold Rush is safer and easier to pedal than an ordinary bike—and it's super-speedy.

On most bikes, air resistance makes you work hard. You use most of your energy just pushing through the air in front of you. On

Gold Rush, you sit low to the ground, leaning against a comfy backrest. There's less air resistance, so you zip right along. (It's also harder to fall off!)

For extra-high speeds, Gold Rush comes with a slick plastic shell. The shell slips over the bike and the rider, directing even more air out of Gold Rush's path. Gold Rush racers go as fast as 65 miles per hour.

Gold Rush is no cheap ride. It costs around \$900. But Gardner Martin, the bike's designer, says dedicated bikers can build their own out of old 10-speed parts.



So What's New?

You tell us and you'll get a nifty CONTACT T-shirt—if we print your story. Send us any science stories from the news that have to do with the future. (Be sure to tell us where you heard the story.)

Send to:

TNT/3-2-1 CONTACT Magazine
1 Lincoln Plaza
New York, NY 10023

WHO'S SMARTER? WHO'S STRONGER?

Is There a Difference Between What Boys and Girls Can Do?

by Joanna Foley

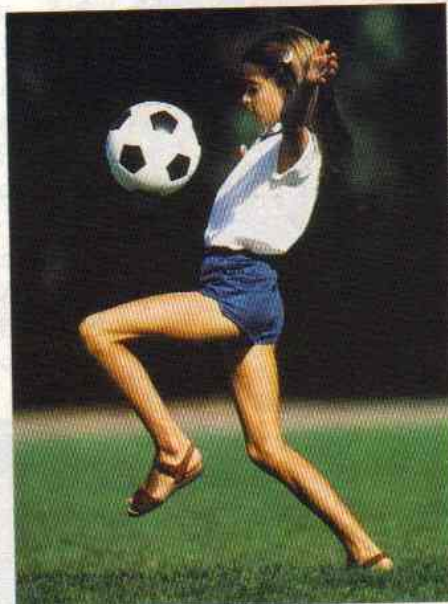


PHOTO © DAVID MADISON/BRUCE COLEMAN INC.



PHOTO © FOUR BY FIVE INC.

Did anyone ever tell you that “real” boys don’t cry? Or did anyone ever tell you to stop being noisy and act like a “proper” girl? Maybe you thought it was unfair that you as a girl weren’t allowed to take part in “boys’” sports. Or maybe you’re a boy and someone made fun of you for acting “like a girl.”

Some people think that all boys should act one way and all girls should act another. But scientists are finding out that the differences between males and females are not as great as people have thought. In fact, they’ve discovered that the things boys and girls have in common are a lot more important than the things that make them different.

Getting Physical

Years ago, most people thought boys were the stronger sex. Girls were thought of as dainty and delicate. In school, physical education classes were based on this idea. Boys were expected to be good in sports. Girls who liked sports were called “tomboys.”

Today, a lot of people still feel this way. But researchers have found out that boys are not stronger than girls. For example, they’ve found that both sexes



PHOTO © ANNIE GRIFFITHS/BRUCE COLEMAN INC.



PHOTO: ROBERT P. CARRIBRIDGE/COLEMAN INC.

are the same size at birth. Not only that, boys and girls stay equal in strength throughout their childhood.

"Boys and girls are equal in strength and in heart and lung capacity," says Dr. Barry Goldberg, a pediatrician. "The two sexes can play safely together on the same sports teams up to about age 10," he adds.

Teen Time

However this begins to change around the age of 11 or 12. That's when boys and girls start to go through the changes that will turn them into men and women.

Sometimes it seems that girls start to mature first. They grow taller very rapidly between the ages of 11



PHOTO © PAMI HASEGAWA/TAPRUS PHOTO



PHOTO © FOUR BY FIVE INC.

and 13. Their bodies also start to look more womanly.

Growing taller comes later for boys. "Most boys start to notice their growth spurt between the ages of 13 and 14," says Linda Madaras, a health teacher. But once they start, boys usually grow taller and stronger than girls.

"Teenage boys begin to show advantages in sports that require throwing," says Dr. Ralph Lopez, a pediatrician. "On the other hand, girls do better on the balance beam and uneven bars. These events call for greater flexibility and balance."

"But these differences are for boys as a group compared to girls as a group," cautions Dr. Goldberg. "This does not mean that every boy will be stronger than every girl."

"Masculine" vs. "Feminine"

What about other differences between boys and girls? For example, school tests show that boys score better in science and math, on the average. Girls score better in languages. Girls and women express their emotions more easily, while boys and men hold their feelings in. Are these differences natural? ➔

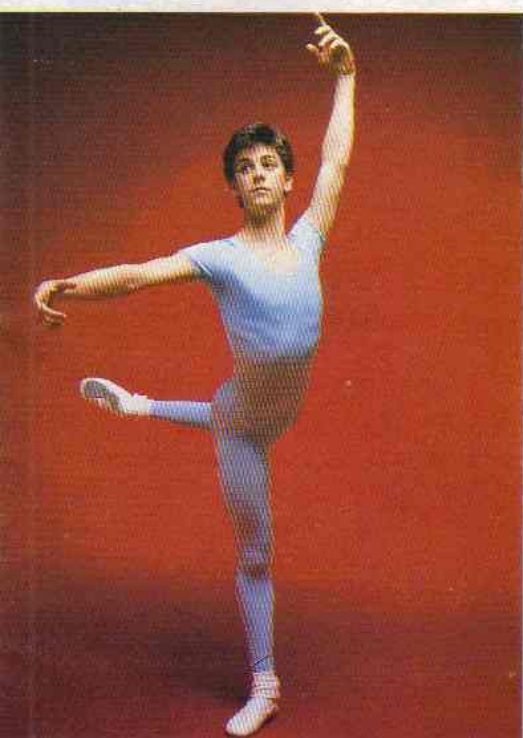


PHOTO: NICK KOLUDIS/PHOTOGRAPHY

Scientists think we're not born with most of these differences—we learn them. Here's how:

Remember what happens when a girl is born? She's wrapped in a pink blanket. She's treated very gently. She's being trained to be "feminine." A baby boy, on the other hand, is wrapped in a blue blanket. His early gifts are trucks and footballs. The family wrestles with him so that he'll grow up to be "masculine."

That doesn't mean that all of the differences between the sexes are learned. Some of them are biological. Scientists are still trying to find out which are which. But one thing they are sure of—everyone is a combination of qualities that we call masculine and feminine. There is no single "natural" way for boys and girls to behave. And more and more adults and kids are proving this is true.

A Woman Motorman?

"I've wanted to drive a subway train since I was a little girl," says Mary Donch. Her mother thought that



PHOTO © CAMERON DAVIDSON/BRUCE COLEMAN INC.



PHOTO © FOUR BY FIVE INC.

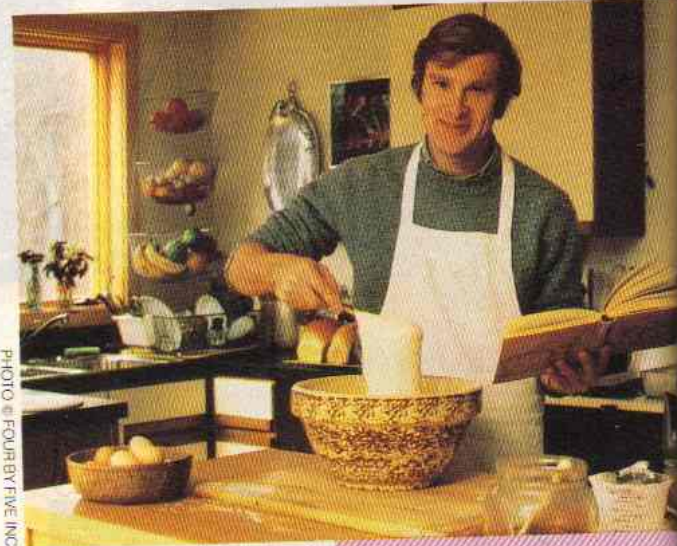


PHOTO © FOUR BY FIVE INC.

Mary would outgrow her interest. But she never did. Today Mary drives trains in the New York subway system and loves every minute of it.

"The greatest thing about being a motorman is being at the controls of a fast train on an express run," she says. "Whoeee! It's fun roaring down that tunnel."

David Olson finds his work exciting in a different way. He teaches two- and three-year-olds in a nursery school. What's fun for him is working with young kids who are so active and full of life.

"My younger students are barely able to talk when they come here," says David. Kids change quickly, however. "By the end of the year, they're speaking very well," he says proudly.

"It's too bad that more men don't see a job like this

PHOTO © D.P. HENSHKOWITZ/BRUCE COLEMAN INC.





PHOTO © FOUR BY FIVE INC.

as a wonderful opportunity," David says. "I love watching kids grow and helping them to learn and explore."

Tom Gold, 18, is the ballet dancer on our cover. When he was eight years old, he appeared in the ballet, "The Nutcracker Suite." But it wasn't until he was 11 that he decided to become a ballet dancer. "Some kids were into baseball, others were into hockey. I was into dancing," says Tom.

Today, Tom goes to the School of American Ballet in New York City. More than 1,000 boys tried to get



PHOTO: R. EMBURY/PPG



PHOTO © FOUR BY FIVE INC.


into the school. Only 20 were accepted. "I spend four hours or more each day practicing jumping, leaping and other ballet steps," Tom told us. "It's hard work, but I love it!"

When Renee DeGroat was four years old, her father took her to the park and threw her a ball. She caught it and has been playing ball ever since.

Renee was a star Little League pitcher in a league where only a few girls played. "I had to put up with teasing and name calling from some boys," she remembers. "But I didn't let that bother me."

Now Renee's favorite sport is basketball. Renee hopes her basketball skills will help her win a scholarship to college. But if not, she is also very good at volleyball, tennis and softball!

Free To Be Yourself

One thing all research has shown is that there are many different types of boys and many different types of girls. Some girls are very good in math. Some boys are gentle and quiet. All people are a mix of different talents and behavior. So the next time someone tells you to act like a boy or act like a girl, you can tell them you already are! 

Kooler News

Kooler Moments in History



On October 22, 1797, a Frenchman named Andre Jacques Garnerin jumped out of a hot air balloon. He was 2,230 feet off the ground. He wasn't crazy. He was testing his new invention, the parachute. Lucky for him, it worked.

You know you're Kooler when...

I didn't Know that!
An average elevator travels about 10,000 miles a year.

Kooler Kids

Jim Wollin is a ninth grader from Lake Mills, Wisconsin. His mother had a problem with jars. No matter what she used nor how she used it, she couldn't get all the peanut butter or jelly out. So Jim invented something to help her: A jar that opens on both ends. It has two tops, one on the top and one on the bottom. Jim called it the "Jar of Plenty." He entered it in an invention competition and won \$250!



If you're a Kooler Kid or know of one, send us your photos and letters.

CONTEST

Ask Dr. Know

Dear Dr. Know,

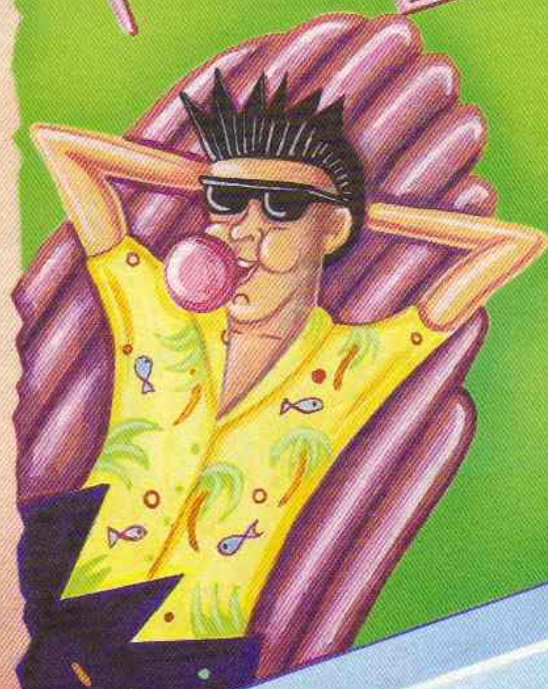
I don't know why I have to take music lessons. My mother says that music will give me joy all my life but right now it just gives me grief. I couldn't get a sound out of the flute, the guitar gave me blisters and whenever I play the piano, my dog leaves the room. What can I do?

Your friend,
Tonedead

Dear Tonedead,

Suffer through your music lessons because believe it or not, your mother is right. When you get older, you won't have to play music, but you'll be glad you know how.

Mail your Kooler questions to Dr. Know.



you try out for the softball team and hit one over the fence the first time at bat.

Mail us your ideas!

winners

We resolved to announce the contest winners in April and here they are.

Congratulations to **Brent Landau** of Kingston, NY. He is the grand prize winner. Here's Brent's winning resolution:

I resolve not to bring home any more aliens this year and I'll even send home the 50 that I have.

Brent will receive a portable color TV.

The second prize winners are:
Chris Meekins, Sandy, UT
Michelle Genet, West Allis, WI
They'll both receive ten speed bikes.

The third prize winners are:
Robert Klein, Staten Island, NY
Carie Blake, Raymond, ME
Heather Pace, Houston, TX
Luis Romero, La Puente, CA
Jake Thomas, Miami Beach, FL
They'll each receive a portable AM/FM radio.



Send your photos and letters to:
General Foods Promotional Services Center
Kooler News, P.O. Box 4810
3 Stuart Drive
Kankakee, IL 60902

HEY Kids!

Make it Kooler!

with **Kool-Aid Koolers**
JUICE DRINK



All letters and photos become the property of General Foods and cannot be returned. You and your parent/guardian will be asked to sign a release form for any letters and photos selected for publication.

© 1986 General Foods Corp.

Funny Farms!

by Elizabeth Herrich

What do you imagine when you think of an animal farm—a place that's full of cows, sheep, chickens and horses? Well, think again! Some farms raise animals that would really surprise Old MacDonald. Here's a look at a few:

Are a 'Gator?

Robert Perkins owns a farm, but none of the animals that live there are furry, friendly or cute. That's because Perkins' farm in Bell City, Louisiana is an alligator farm, home to over 3,000 'gators.

Though tough-skinned, alligators are very picky about where they live. Most of the 'gators on Perkins' farm are raised in shallow pools inside greenhouses. The temperature in the greenhouses is always kept between 85 and 90 degrees Fahrenheit. "This means the alligators grow all year long," says Perkins. "In the wild, they stop eating after the first cold weather."

Farm-raised 'gators can grow as much as five feet during the first year. (Wild ones grow only about one foot in the same time.) When the farm 'gators are seven feet long, they are killed and used for their meat and skin.

Alligators have big appetites—they eat about 10 times their body weight each week. Their favorite foods are lean red meat, rodents and chicken.

"They'll eat anything," Perkins adds. "But for all their ferocious looks, they're really quite gentle."

Maybe so, but you still wouldn't want them to eat out of the palm of your hand!

Great Gators

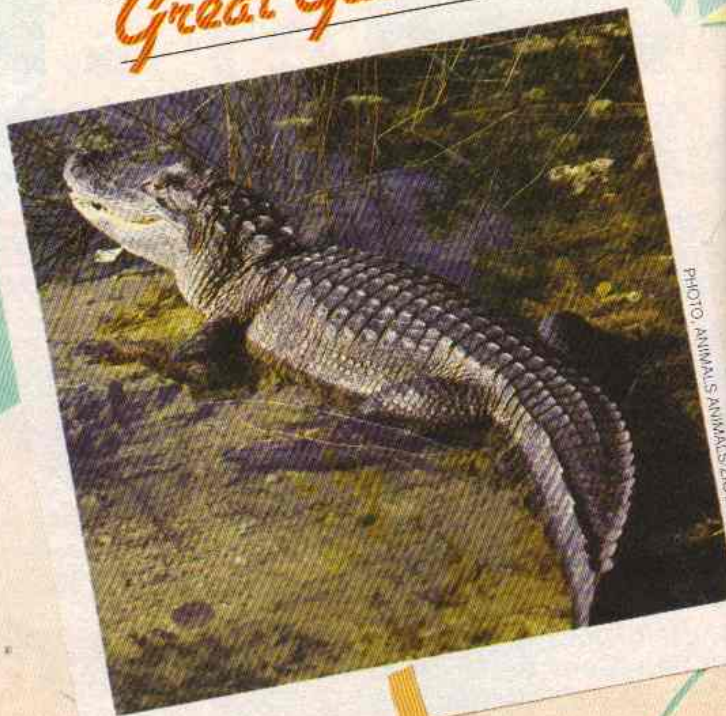


PHOTO: ANIMALS ANIMALS

Home on the Range

There's a ranch in California where a herd of nearly a million is being raised. But these animals are so small that the entire ranch fits on just one acre. And you won't find any cowboys or horses on this ranch either, because what's raised there is a tasty species of snail!

The ranch, called *Enfant Riant* (that's French for "laughing child"), is the first snail ranch in the United States. The snails bred there will someday make a fine French dish of snails, butter and garlic.

"There are a lot of snails here in California. They are considered a pest because they eat crops," says Tracy Brash, co-owner of *Enfant Riant*. "We collected the snails and started breeding them."

The snails are raised in greenhouses where they're kept in plastic buckets. Around 300 snails live in each bucket and are fed bran, soybean meal and oyster shell. After about six months, the snails are boiled briefly and removed from their shells. Then they're placed in sealed cans, boiled again, and shipped off to restaurants and food stores.

Bee Dop

You've heard of "spelling bees," "quilting bees" and "busy as a bee." But have you heard of a bee farm?

There are about four million bee farms in the United States. The bees on these farms live in colonies—or hives—of up to 70,000 per hive. Bee farmers rent these hives to other farmers because the bees help grow crops.

Here's how it works: Bees love nectar—that's a sweet liquid made by flowers. The bees fly from flower to flower collecting it. As they leave each flower, grains of pollen stick to the bees' legs. →

Super Slimies

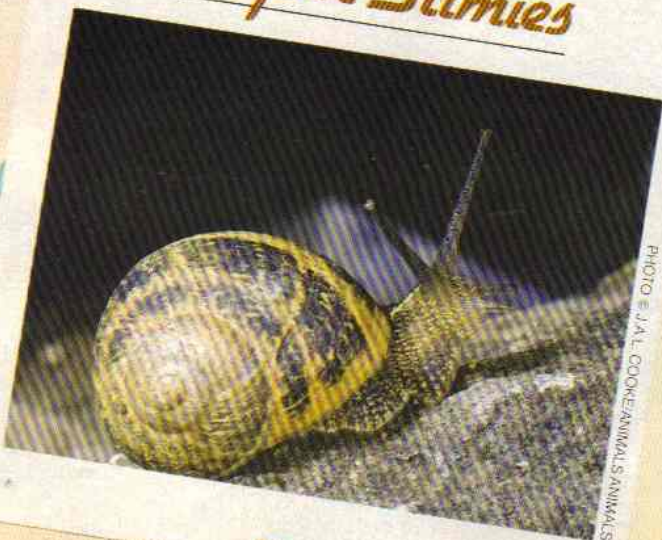


PHOTO © J.A.L. COCKE/ANIMALS ANIMALS

Best Buzzers



PHOTO © OXFORD SCIENTIFIC FILM/ANIMALS ANIMALS

When the bee enters a new flower, some of the pollen brushes off on a part of the flower called the pistil. The pollen grains travel down into the flower and fertilize egg cells. Then part of the flower grows into an apple, pear, or other fruit.

But pollinating isn't all the bees do. In their off-hours, they make the nectar into honey—about 250 million pounds of it a year! These bees really are as busy as, well, bees.

Worm Swarm

There are 19 million worms living on Frank Perzival's farm in Olathe, Colorado. So why doesn't he do something about it? Because it happens to be a worm farm.

"Yup, we've got red wigglers—guess you could call those earthworms," says Frank. "We raise them in 50-foot-long pits that are two feet deep. There are about 4,000 worms per square foot."


Frank's worms—and most worms raised on farms—are used for fishing bait. "They're just about as easy to raise as anything I can think of," he explains. "You start out with 2,000 worms, and in one year you get a million. They lay eggs every seven to 10 days. Each egg has two to 20 babies. Before you know it you've got a lot of worms!"

The red wigglers on Frank's farm are fed every 10 days. This keeps the worms happy. That is, until they become bait for some unsuspecting fish.

Something Fishy

Lots of farms have a pet cat. What kind of farm has catfish? A catfish farm. Over three million catfish are raised every year on farms in Mississippi, Louisiana and Arkansas.

Catfish get their name because they have growths around their mouths that look like whiskers on a cat. Unlike cats, however, catfish like to live at the bottom of muddy creeks. When they are raised on farms, catfish live in long, narrow ponds about three or four feet deep. They are fed soybeans, corn, fish and bone, and eat as many as 15 times a day.

When the catfish are a foot long, they are ready to be harvested. They wind up in a restaurant or on your table. And that's something to purr about. 

Whisker Wonders



PHOTO: E. R. DEGENER/ANIMALS ANIMALS

World-Class Wigglers



PHOTO: BRECK P. KENT/ANIMALS ANIMALS

Be a Big-Orange-Big-Shot with TANG

BRAND
BREAKFAST BEVERAGE CRYSTALS

Get all of this big, orange stuff when you collect the labels on jars of TANG. See order form below for label and purchase requirements.

1. **Your #1 Phone:** This unique push-button phone with cord is really something to talk about.
2. **Tunes from TANG:** This hot AM/FM radio comes complete with headset. (Batteries not included.)
3. **T is for TANG:** Slide into this oversized orange T-shirt. One size fits all.
4. **Suspenders from TANG:** They're orange. They're adjustable. And they're a lot cooler than a belt.
5. **Brighten your life:** This pocketlight changes from a flashlight into a desklight and back again. (Batteries not included.)
6. **Ahead of your time:** Our big, orange digital pocketwatch even comes with its own chain.
7. **Headband or 8. Sweatbands:** Get one or both, no sweat.
9. **Sunglasses from TANG:** These hot shades are the coolest ones around.
10. **Stuck on TANG:** These big, orange stickers come in their own handy dispenser.
11. **Shoot the Hoops:** This orange soft-foam basketball and hoop set lets you be a big shot.
12. **SUPER BONUS FROM TANG: LASER CHALLENGE™**—the game of the future—can be yours at a big savings when you order at least one of the above items. Includes 1 light gun and 1 vest. (Batteries not included.)

BIG-ORANGE-BIG-SHOT ORDER FORM

To get your Big-Orange-Big-Shot stuff from TANG, send this completed form, required labels and check or money order to the address below.

SEND TO: TANG Brand
P.O. Box 5930
Kankakee, IL 60902

Name _____
Address _____ (Please print)
City _____ State _____ Zip _____

Offer void where prohibited, taxed or otherwise restricted. Allow 6-8 weeks for processing. Offer good only in U.S.A. - Puerto Rico and U.S. Govt. installations. Order form may not be transferred, exchanged or sold, nor may it be reproduced or copied. Additional order forms are available by mail by writing: P.O. Box 5936, Kankakee, IL 60902, and will accompany orders fulfilled.

This Certificate must accompany your request.

ORDERS MUST BE RECEIVED BY DECEMBER 31, 1987.

ITEM	LABELS REQ.*	MONEY REQ.†	QTY.
1. #1 Phone	2	\$10.00	
2. AM/FM Radio	2	7.25	
3. T-shirt	1	3.50	
4. Suspenders	1	2.75	
5. Pocketlight	1	3.00	
6. Pocketwatch	1	3.75	
7. Headband	1	1.25	
8. Sweatbands (pr.)	1	1.25	
9. Sunglasses	1	2.25	
10. Stickers/Dispenser	1	1.50	
11. Basketball Game	1	1.75	
SPECIAL OFFER WITH PURCHASE OF ONE OF THE ABOVE:			
12. LASER CHALLENGE™	2	27.75	
TOTALS ENCLOSED			

Are you ready for the Big Orange Taste?



Actual items may vary slightly from those shown.
© 1987 General Foods Corporation

*Offer not valid on 20-qt. size. †Includes Postage and Handling.

Any Questions?

by Andrew Nachison

What causes the Tower of Pisa to lean?

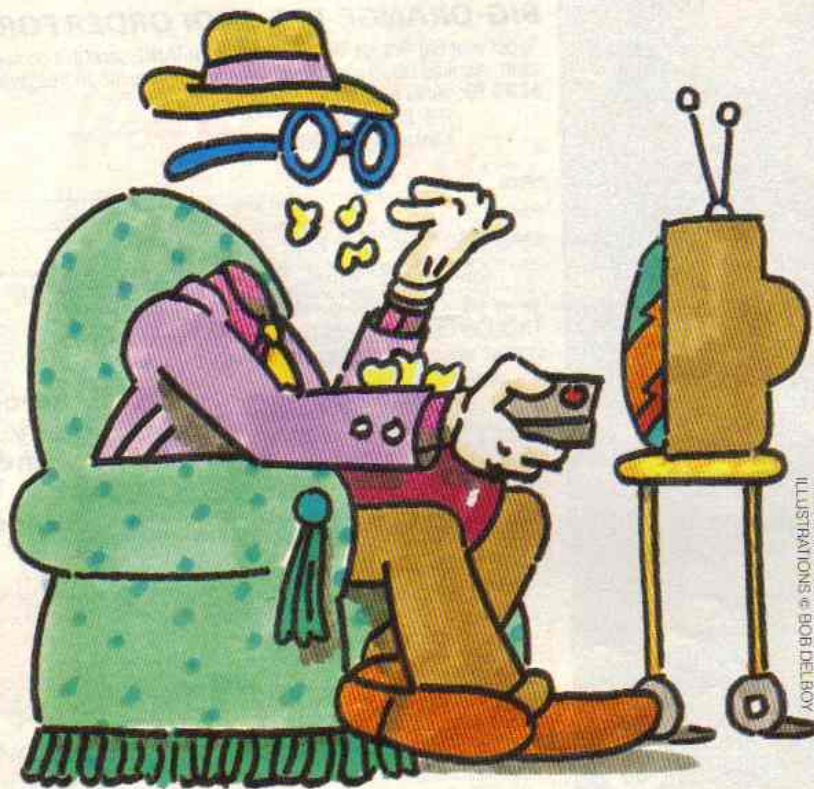
The Leaning Tower in Pisa, Italy looks like it's about to fall over. But it has been leaning that way for over 600 years!

The folks who built the tower didn't realize that they were putting it up on very soft ground. So just after the third story of the tower was completed, the building became too heavy for the land it was built on. And the tower started to tip!

This didn't stop the architects and builders from finishing the tower. They changed some of their plans—but it's still tilting.

Scientists have measured the tilt every year since 1918. The tilt increases about one millimeter a year, but no one thinks there's much danger of the tower falling over too soon. We hope that's no tall tale!

Question sent in by Stephen Poncharik, Deland, FL.



ILLUSTRATIONS © BOB DEL BOY

How do remote controls work?

Remote controls let you operate your TV or VCR without ever moving from the couch. There are three different types of remote controls. The simplest is a control box attached to your TV by a cord. This is called a *hard-wire* remote control.

Another type of remote control sends invisible flashes of light which are "seen" by a sensor in the TV. Each command has a different number of flashes. Computers inside the TV interpret the flashes and tell the set what to do. This type of control has no wires connecting it to the TV. This is called *infra-red* remote control.

The last type of control sends radio signals just like the ones your radio at home picks up. It sends a different signal for each command. This type, called *radio* remote control, is also used to control model cars, boats and planes.

Question sent in by Rachel Thompson, Scio, OR.

Do you have a question that no one seems able to answer? Why not ask us? Send your question, along with your name, address, and age, to:

Any Questions?
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

What's the difference between a fruit and a vegetable?

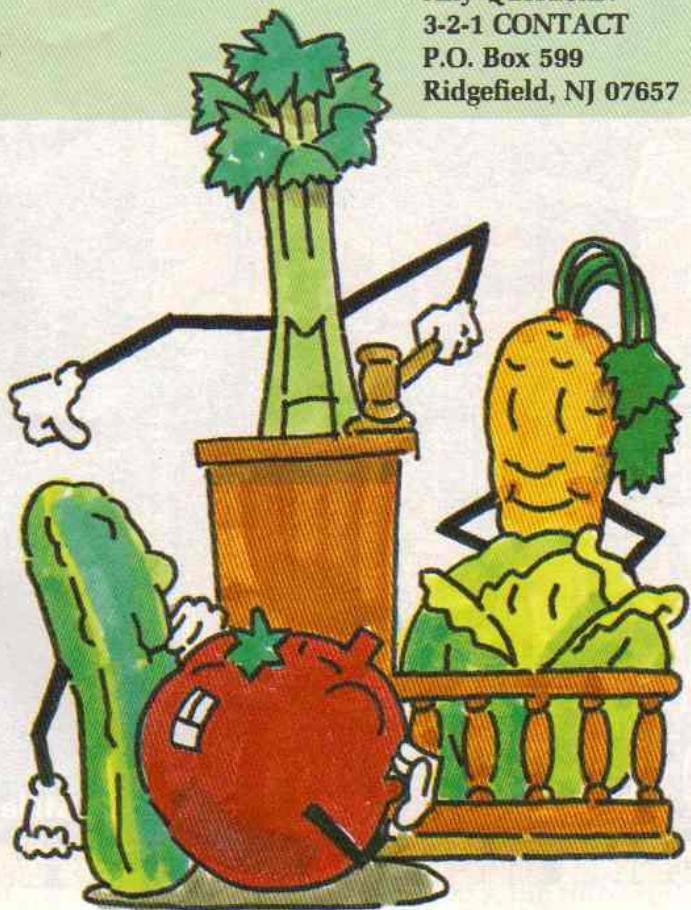
Any food which is part of a leaf, stem, or root of a plant—and doesn't have seeds—is a vegetable. Cabbage, celery, lettuce and carrots are all vegetables.

Botanists (scientists who study plants) say fruits have seeds or pits inside. Apples, oranges, peaches and plums are all fruits. But there are some surprises in the fruit family. Since tomatoes, cucumbers and squash all have seeds—they're fruits, too.

Some people refuse to accept that a tomato is a fruit. Sixty-five years ago, a U.S. judge ruled that tomatoes were vegetables because they're usually eaten with the main meal. He claimed fruits were usually eaten for dessert. Of course, scientists don't agree with him.

Next time you're eating your tomatoes and squash, and your mom tells you to finish your veggies, check your plate. You may be eating fruit. (But we suggest you finish them anyway!)

Question sent in by Clare Pierson, Aurora, CO.



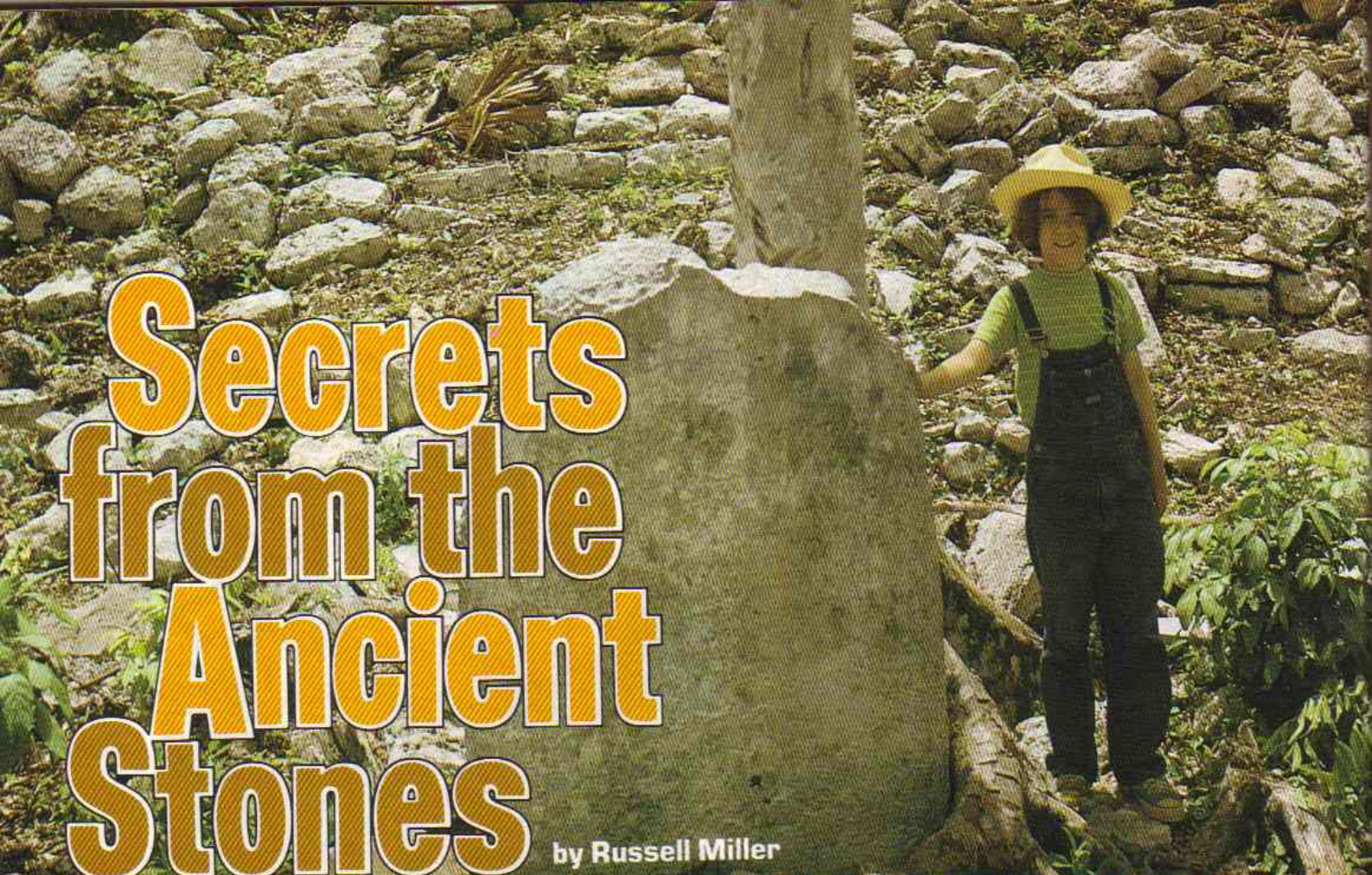
Why does skin wrinkle? Sometimes skin wrinkles when you're out in the sun too much. That's because the sun can take the moisture—and the smoothness—out of your skin.

Also, the ultraviolet rays of the sun can destroy tiny fibers—called collagen—that are in your skin. These fibers help support the skin. They keep the skin tight and smooth. When collagen fibers stretch out of shape, they give less support and wrinkles form.

Doctors say that all parts of the body that are exposed to the sun will wrinkle. And people who spend a lot of time sunbathing may find themselves wrinkling at an earlier age.

But as you get older, your skin loses moisture and elasticity naturally. That's why older people have more wrinkles than kids.

Question sent in by Gregg Fisher, Lancaster, CA.



Secrets from the Ancient Stones

by Russell Miller

A YOUNG SLEUTH UNRAVELS MESSAGES FROM THE PAST

Deep in the Mexican jungle, an eight-year-old boy explored rugged paths. Spots of tropical sunlight worked their way past the twisted vines and thick leaves of the forest roof.

He passed ancient, overgrown ruins—crumbling walls and towering pyramids. Suddenly, he came upon a strange stone covered with unusual carvings: loops and lumps and curled-up cats, scowling eagles and wide-eyed skulls. Fascinated, the boy took a pencil and began to copy the weird pictures from the rock.

The pictures were messages from another time and another civilization. But they weren't left by visitors from a faraway galaxy. They were left by Earthlings—by an ancient people that ruled in Central America for hundreds of years before Christopher Columbus crossed the Atlantic Ocean—the people called the Maya (MY-uh).

The boy, David Stuart, found those Maya writings back in 1974. His dad, Dr. George Stuart, is an archeologist—a scientist who studies the remains of ancient civilizations. Dr. Stuart had brought his family to Mexico to map the ruins of what once was a great Maya city.

“We lived in a thatched hut—all six of us,”

David told CONTACT. “There was no TV, no air conditioning. It was really the pits for a while. Then I began to look at the stuff around me. I would have been completely bored otherwise.”

Today, David Stuart is a student at Princeton University in New Jersey. He still studies Maya writings, spending summers in the land of the Maya. At age 21, David Stuart has become one of the world's experts on Maya writings. He's working to unscramble the mysteries of the Maya.

What's A Maya?

The Maya people first appeared in southern Mexico and Central America more than 2,000 years ago. By the third century, long before countries like France and England even existed, their civilization was booming.

Maya engineers figured out ways to bring water to the fields where farmers grew corn, beans and squash. Astronomers studied the skies, tracking the movements of the sun and moon. Architects designed cities with vast stone plazas. They built huge temples and pyramids.

The Maya had their own calendar and system of arithmetic. They played a mysterious ball



Above: The light green area on the map shows where the Maya lived.

Left: David Stuart first visited the land of the Maya in 1974.

PHOTO COURTESY DR. GEORGE STUART



In 1983, David and his dad hunted for glyphs in the jungles of Guatemala.

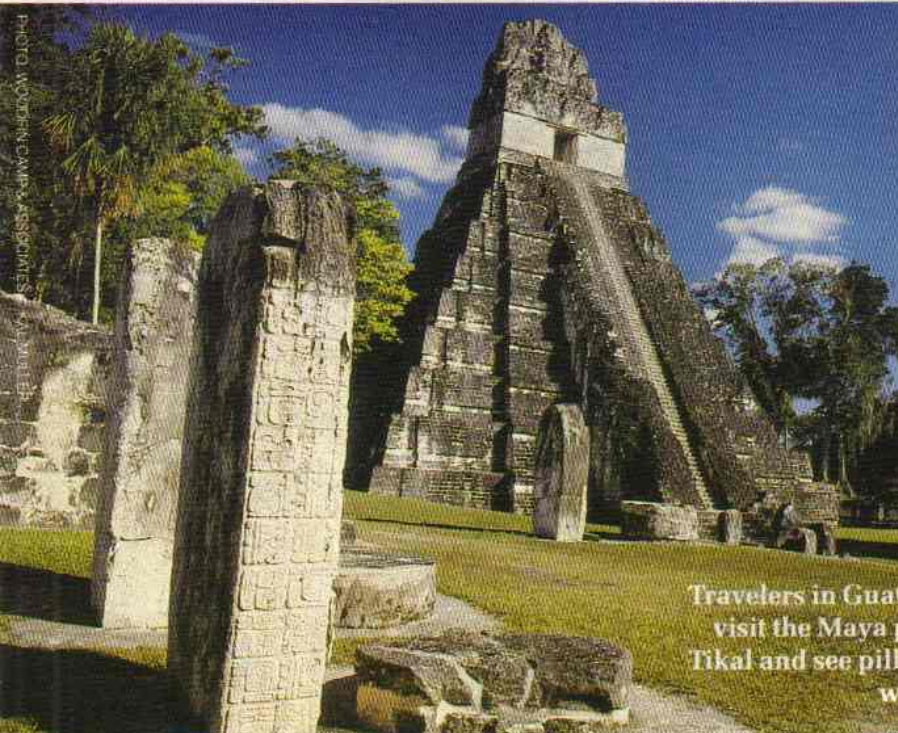
game—something like basketball, only more serious. (Some experts think the losers lost their clothes. Some say they lost their lives!) They had complicated forms of religion and government.

Most important for scientists like David Stuart, the Maya had their own written language. It's a language of "glyphs," or pictures that stand for sounds and words. The Maya wrote glyphs in books made from tree bark. They carved them into pillars and the walls of temples. Most of the books have disappeared, but the carved glyphs remain. They hold important clues about the Maya world.

A Mysterious End

By the year 900, the grand cities and the mighty kingdom of the Maya had crumbled. No one knows just what happened—war, or disease, or some natural disaster. When Spanish explorers arrived in the 1500's, the ruins remained, but the people of Central America had little to say about the once-great Mayan empire.

Archeologists began to search for the secrets of the Maya only 150 years ago. They mapped the locations of Maya cities. They dug up pottery, carvings and mosaics. Pots and ruins, though, could not tell what kind of people ➔



Travelers in Guatemala can visit the Maya pyramid at Tikal and see pillars carved with glyphs.

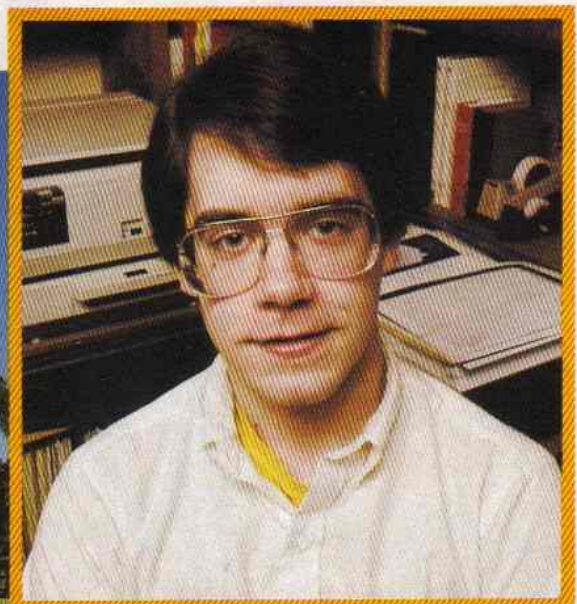


PHOTO © ANN HAWTHORNE

Here's David today—a student at Princeton University.

Palenque, in Mexico, is a well-explored Maya site.

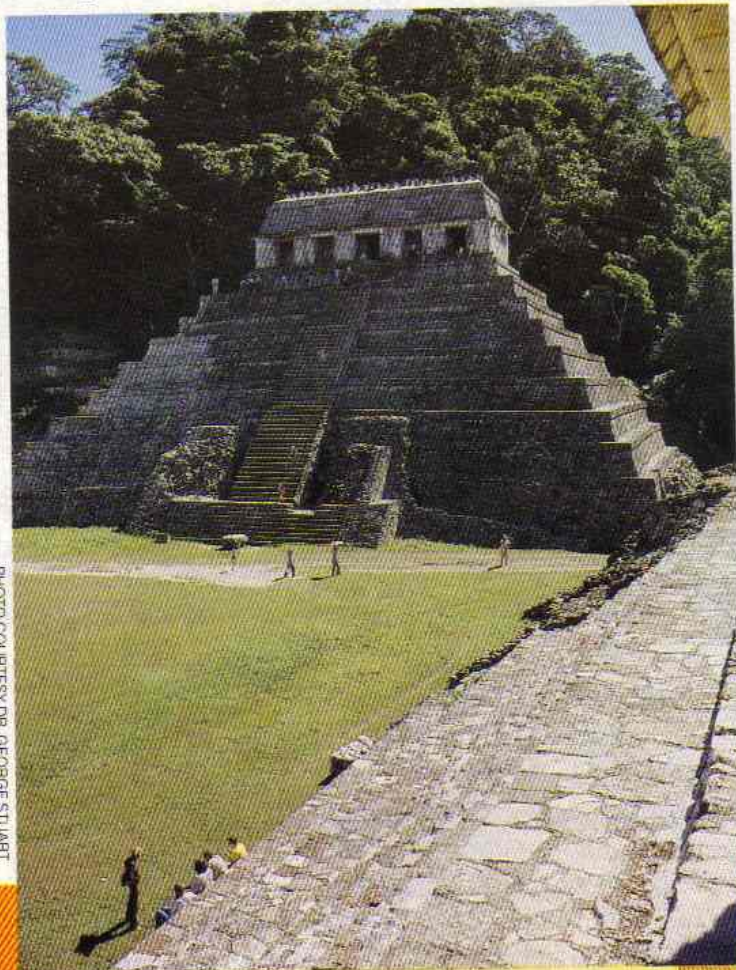


PHOTO COURTESY DR. GEORGE STUART

the Maya were. If only scientists could decode the glyphs, they could hear the Maya “speak.”

About 30 years ago, glyph experts began to notice that the tiny pictures were arranged in complicated patterns. Here and there, after long months studying a pattern, an archeologist would figure out a single glyph—a symbol for birth or death, the name of a city, or even a person’s name. Facts trickled from the carvings.

Reading About Martians

“The neat thing is that we’re reading about a culture that’s so different from ours,” says David Stuart. “It’s like reading about Martians in a way, and it’s really hard for us to get into their minds. They’re really still strange people to us.”

The writings contained the names of long-forgotten Maya kings and the histories of the wars they fought. They carried details about Maya religion and government. For years, archeologists had believed that the Maya were a peaceful people. The glyphs told a different story.

“The Maya were pretty bloody,” David says. “When they captured people, they didn’t mess



This is one artist's idea of the Maya ball game.

around. They probably tortured them and chopped their heads off.”

During his first summer among the Maya ruins, David just copied glyphs from the stones and pillars he found in the woods. Little by little, he too began to notice patterns in the pictures.

“I developed a way of looking so I could really pick things out in the glyphs,” he told CONTACT. “They probably would have looked like a bowl of spaghetti to anyone else.”

With help from his father and other archeologists, David learned to understand Maya writing. The summer he was 12, he figured out the meaning of a glyph no one had ever read before—the name of a Maya god.

Tricky Pictures

Finding glyph patterns isn’t easy. You can’t just look for pictures that look alike. Each glyph can stand for a whole word—or for a sound that’s part of a different word. And two glyphs that sound the same might mean the same thing—but, then again, they might not.

David explains it this way: “The Maya might

have said, ‘Here are three words that all sound the same: “to,” “too,” and “two.” You can use any of them. So you can only figure out what they mean by seeing where they’re used.’”

By now, experts understand about three-quarters of the glyphs. New information comes slowly, glyph by glyph. For instance, there’s a glyph that appears often in writings about Maya rulers. Scientists used to think it meant “water.” David proved that it also means “blood,” which shows that the Maya used human blood in many ceremonies. That changed the way a lot of people thought about the Maya—including David.

“I wouldn’t want to be stuck back with the ancient Maya, even though I’m really interested in those folks,” he says. “I don’t think I’d want to travel back then in a time machine.”

That doesn’t mean David has read all the Maya glyphs he wants to, though. He’s still in college, and he hasn’t decided on a career yet, but David Stuart says one thing’s certain: “I don’t think there’s anything else I could do that would be as much fun!”



ILLUSTRATION BY BOB PEPPER

Maya Match

How do archeologists decode Maya glyphs? They study them carefully and look for patterns. When they learn information about one glyph, they use it to figure out another.

In CONTACT's Maya Match glyph puzzle, we used real Maya glyphs to write three goofy messages. Glyph by glyph, you can fill in the blanks with the sounds that make up the silly sentences. Here are the rules:

1. Each glyph stands for a sound. Sometimes the sound is a whole word. Sometimes it's part of a word. Remember—you're looking for the right sound, not the right spelling.

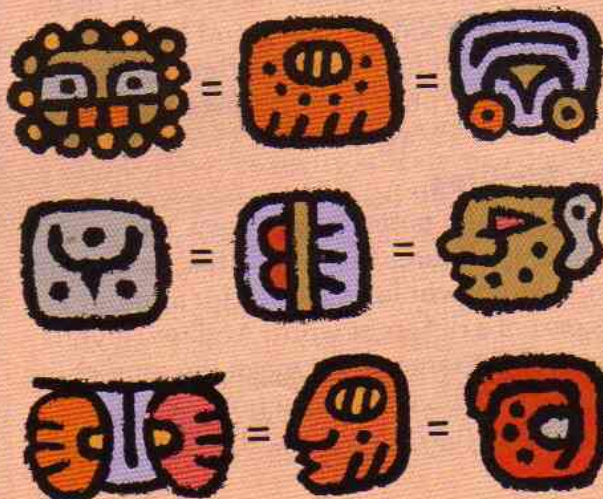
2. Some glyphs are sound-alikes—different pictures that all stand for the same sound. They're listed on the right.

3. To find the sound of an unknown glyph, look for the same glyph somewhere else in the puzzle. If it's written there, you're on your way. If not, check the sound-alikes.

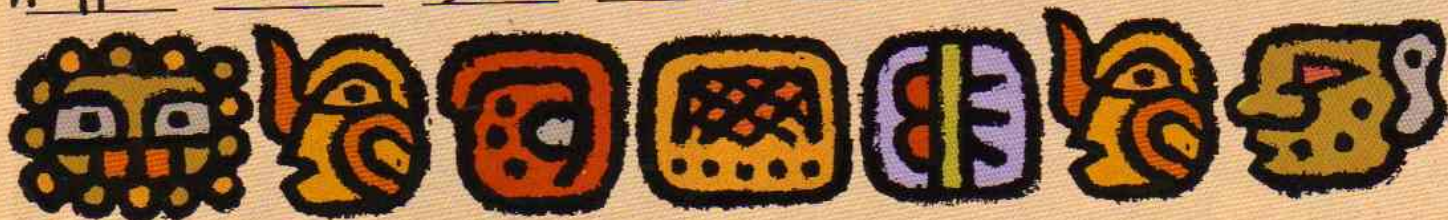
Now it's up to you. The solutions are on the Did It! page.

Sound-alike Clues

("=" means "sounds the same as")



1. IF _____ SEE YOU _____ ME.



2. I _____ CAN _____ THE _____.



3. WENT TO _____.

THE BLOODHOUND GANG

The Case of the Magic Masterpiece

by Becky Cheston



Wh incredible! It's the middle of April, and I'm snowed under!" Skip peeked out from behind a mountain of papers. It was a warm April afternoon and the Bloodhound Gang was sorting the office files.

"Better not call this 'spring cleaning'," said Ricardo. "It could take us all year!"

Just then, there was a knock at the door. "May I interrupt?" said a middle-aged man in a tweed jacket and blue jeans.

"Please do!" said Skip.

It was Hudson Moore, an art professor from Blake University. "I need your help," he said. "A valuable work of art has been stolen from my office. It's worth \$10,000!"

A Sketchy Case

Vikki cleared a stack of files from a chair, and the professor sank into it. "It was a Cybil Morino," he said sadly.

"Morino?" asked Vikki. "Never heard of her."

"Not many people have," said Moore. "But they will soon. She's the most exciting young modern artist to come along in years!"

"And you had one of her paintings in your office?" asked Ricardo.

"She had just given it to the university," ex-

plained Mr. Moore. "It was on watercolor paper—it wasn't even framed yet. The last I saw it, it was on top of my desk."

"Who else knew it was there?" asked Vikki.

"No one," replied the professor. "That's what's so strange about this. How could anyone have known that that small piece of paper was worth \$10,000?"

"Who else can get into your office?" asked Vikki.

"Three people," Moore replied. "My secretary, Polly Knight, my teaching assistant, Jonathon Clarke and, of course, the chairman of the art department, Jameson Farber."

"That narrows it down," said Skip.

"But I've already asked them about it," said the professor. "They say they don't even know who Cybil Morino is. What am I going to do? The painting has simply vanished!"

"Hey!" said Ricardo. "If the painting's done a disappearing act, then we need a magician!"

"Marco the Magnificent!" Skip yelled.

"Now wait a minute!" said Vikki.

"What have we got to lose?" asked Skip.

"Only our reputation," Vikki groaned.

Half an hour later, Professor Moore and the Bloodhound Gang were still sitting in the office. So were the stacks of files.

"I came right away." ➡

All four heads turned towards the door as the legendary magician entered. He was tall, and dressed in a dark suit. But he walked with a flourish that made it seem as if he were wearing a sorcerer's cape.

"How can I help you?" he asked.

"Can you make all these papers disappear?" asked Skip.

"No," said the magician, laughing. "But I can show you a paper trick. This money goes to whoever can catch it!" he said, taking a 10-dollar bill out of his pocket. "Who wants to go first?"

Skip stepped up, and the magician dangled the bill by one end. "Put your fingers around the top of the bill so you're almost touching it. Get ready to catch it when I let go."

Skip did as he was told. But when Marco let the money drop, it slipped through Skip's fingers and drifted to the floor. Ricardo tried, then the professor and Vikki. But their luck was no better.

"Now, watch!" said Marco, dropping the bill once more—and catching it!

"How did you do that?" asked Ricardo.

"It's magic—right?" said Vikki, skeptically.

"No," said Marco. "Just a little science."

Fast Cash

"You see, it takes a small amount of time to respond to something you see. First, light reaches the back of your eyes, then nerves send impulses to the brain. Then other nerves carry messages to your muscles."

"And then you move," said Ricardo.

"Right," Marco nodded. "The time it takes to respond to the sight of the falling bill is less than one quarter of a second. But that just isn't fast enough—the money falls faster."

"But you caught it," said Skip.

"Ah yes," said the magician. "But I was also holding it. I knew when I was going to let go."

"Interesting," said Vikki. "But I've got a feeling we should move from magic to mystery."

"Right," said Marco. "Can you describe the missing art work exactly, Professor?"

"Yes," said Moore. "It was small with two red streaks here, a green circle here..." Moore drew a sketch for the magician.

"Good!" said Marco. "I think I know just how to go about this. Professor—can you organize a little dinner party at your house?"

"Certainly," said Moore. "May I ask why?"
"We're going to conjure up a thief!"

A Sliding Supper?

The next evening, the Bloodhound Gang was having appetizers in Professor Moore's living room. Marco the Magnificent was there, and so were Jonathon Clarke, a short, blond graduate student, and Polly Knight, a smartly dressed woman in her fifties.

Just then, the doorbell rang, and Jameson Farber entered, wearing a bow tie and a sweater.

"Good—we're all here," said the professor.

"Supper is ready!"

Everyone followed Moore into the dining room.

"Wow!" said Skip, his mouth watering.

The huge table was set with gold-edged plates, candles, and steaming dishes of food, all laid out on a white tablecloth.

"Impressive, Professor," said Marco. "But you don't need this." As everyone watched in horror, Marco the Magnificent lifted an edge of the tablecloth—and pulled.

Vikki closed her eyes. But when she opened them, there were no dishes on the floor. Everything was still on the table. Except for the tablecloth. Marco was holding it.



"The dishes!" said Polly Knight in amazement. "They're still there!"

"And why not?" asked the magician. "Aren't you familiar with Isaac Newton's First Law of Motion? Objects in motion remain in motion, and objects at rest remain at rest, unless an outside force acts upon them."

"Isn't the tablecloth an outside force?"



asked Skip.

"No," said Marco. "Let me show you."

He walked over to the table. "I'll put this napkin under the empty glass. I pull the napkin slowly and—"

"Aha!" said Jameson Farber. "It tipped over."

"Yes," said Marco. "But the napkin is not the outside force which is acting on the glass."

"What is?" asked Skip.

"Friction!" said Marco. "So suppose you could eliminate the friction between the napkin and the glass—or between any two surfaces? Presto—you'd have a magic trick!"

"But how?" asked Ricardo.

"Well," explained Marco, "you can use a slippery substance, like oil, or make both surfaces very smooth. Or, you can reduce friction by moving the tablecloth very quickly. Then there is less friction between the cloth and the dishes."

"Magnificent," said Professor Moore. "Now, may we eat?"

A Ripping Good Time

When they had finished eating, Ricardo stood up and cleared his throat.

"Ladies and gentlemen," he said. "Tonight, we're going to have a very special treat."

"I can see that," said Skip, eyeing a luscious chocolate layer cake.

"Please follow me to the living room, where Marco the Magnificent will perform for us!"

Everyone moved into the living room and sat down. The lights dimmed, then brightened again. There stood the magician, holding a sheet of paper painted with splashes of color.

"The Morino!" Moore whispered to Vikki.

"Where did he find it?"

"I will now rip this paper in half," Marco announced, tearing the painting in two.

"Don't!" It was Jonathon Clarke. He had leapt out of his chair. But Marco continued, putting the two ripped halves on top of each other and tearing again and again.

Just then, Ricardo sneezed loudly. Polly handed him a handkerchief.

"Behold." The magician had crumpled the ripped pieces into a ball in his hand. Now, he was unfolding it. It was whole!

Jonathon Clarke sat down. "It was just a trick," he said with relief.

"But why did you get so upset?" asked Vikki. "You must have known what the Morino painting looked like! Here's your thief, Professor!"

"Marco, how did you do it?" Farber asked.

"Actually, Clarke still has the original Morino," explained Marco. "I used two copies."

"There were two?" asked Polly.

"Yes," said the magician. "I crumpled one and hid it in my sleeve. Then I tore up the second copy. I crunched the torn one into a ball and squeezed the two balls together in my hand. It just looked like one ball—right?"

"Yes!" exclaimed Skip.

"But the real trick came next," Marco continued. "I needed to get your attention away from my hand. So, I had Ricardo sneeze. You looked at him for a second—just enough time for me to push the torn ball up my sleeve. Then I unfolded the untorn copy."

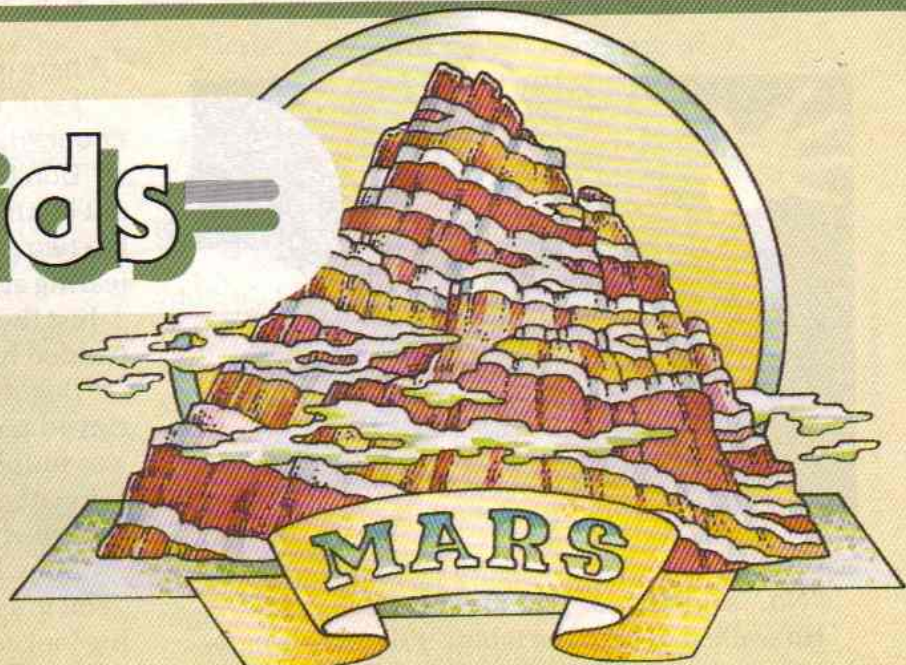
"Easy!" laughed Farber.

"No," said Skip, heading for the dessert cart. "Piece of cake!" **END**

**Watch for next month's
Bloodhound Gang
mystery!**



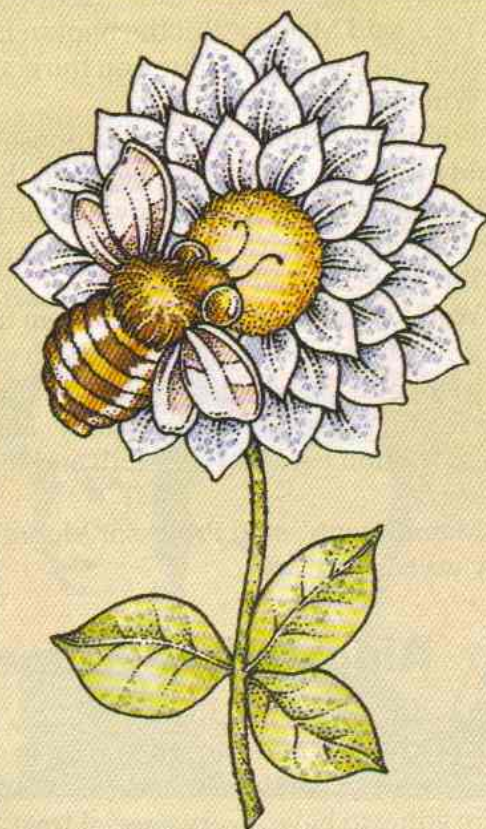
Factoids



There is a mountain on Mars three times taller than Earth's tallest mountain, Mt. Everest.



The Irish Wolfhound and Great Dane are the tallest breeds of dogs. They measure as much as 39 inches from their shoulders to the floor.



A bee must make about 4,200 trips to a flower in order to produce a tablespoon of honey.





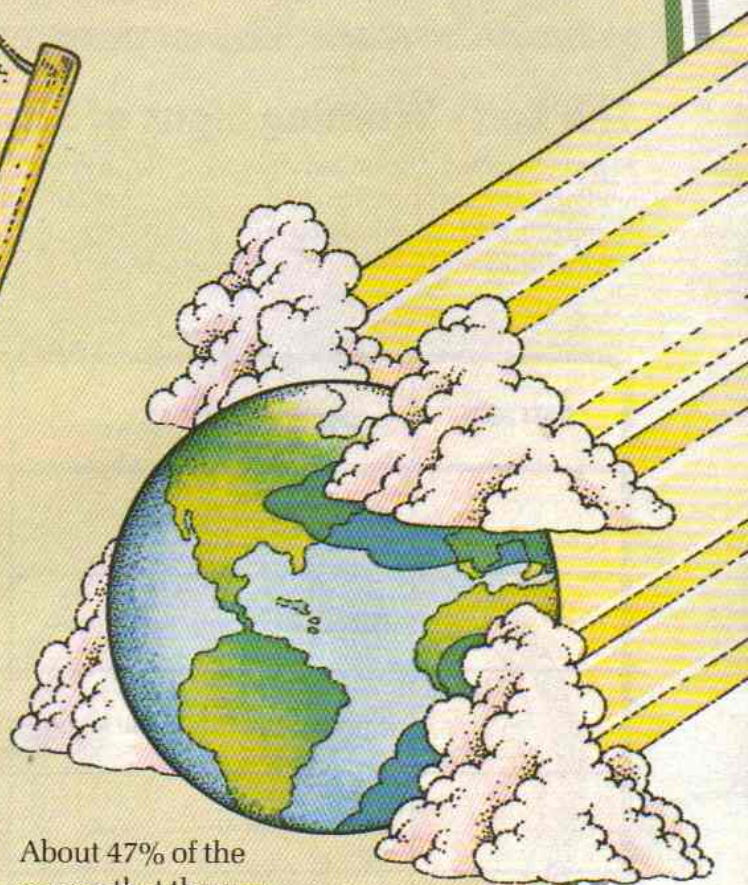
The world's first parking meter was set up in Oklahoma City in 1935.

ILLUSTRATIONS BY JOHN NEZ



It takes your blood about 23 seconds to make a complete trip through your body.

The longest beard ever grown belonged to Hans Langseth. It measured 17½ feet.



About 47% of the energy that the sun beams toward the Earth reaches the ground.



Exploring

The Early Warning Signs of Spring

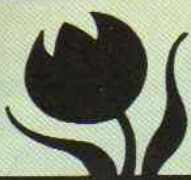
If you check the calendar, you will notice that spring arrives on March 20. Each day after that will have a little more sunlight than the

day before.

Actually, the cycles of spring may begin earlier or later than March 20, depending on where you live. Plants

and animals will provide you with some of the first signs of spring. Fill in the dates on this checklist as you watch spring arrive.

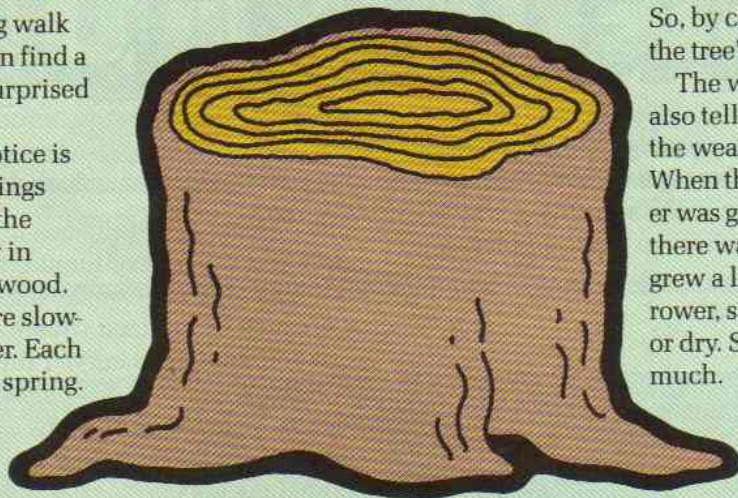
DATE SEEN	SIGHT	LOOK FOR
	Migrating birds return.	geese, ducks, robins, sparrows, red-winged blackbirds
	Hibernating animals appear.	toads, frogs, field mice, squirrels
	Spring flowers begin to bloom.	crocuses, snow drops, primroses, blue-bells, violets
	Insects appear.	butterflies (mourning cloak, purple azure), flies, mosquitoes
	Green plants start growing.	pussy willow, fern, skunk cabbage
	Buds appear on trees.	willows, swamp maples, birch



Reading the Rings

During your next spring walk in the woods, see if you can find a tree stump. You may be surprised at what it can tell you.

The first thing you'll notice is the pattern of wide light rings and dark narrow rings in the wood. Trees grow quickly in spring and produce light wood. In summer they grow more slowly and their wood is darker. Each light band represents one spring.



So, by counting them you can tell the tree's age.

The width of the light rings also tells you something about the weather during past springs. When they're wide, spring weather was good. The days were warm, there was lots of rain and the tree grew a lot. Where they are narrower, spring was probably cold or dry. So the tree didn't grow as much.

A Bicycle Built for You

Now that spring is here, you can hop on your bike and just speed away, right? Not so fast! Your bicycle has been sitting around all winter. Before you go zooming off, make these important safety checks.

Bell rings or horn honks.

Headlight and reflectors work properly.

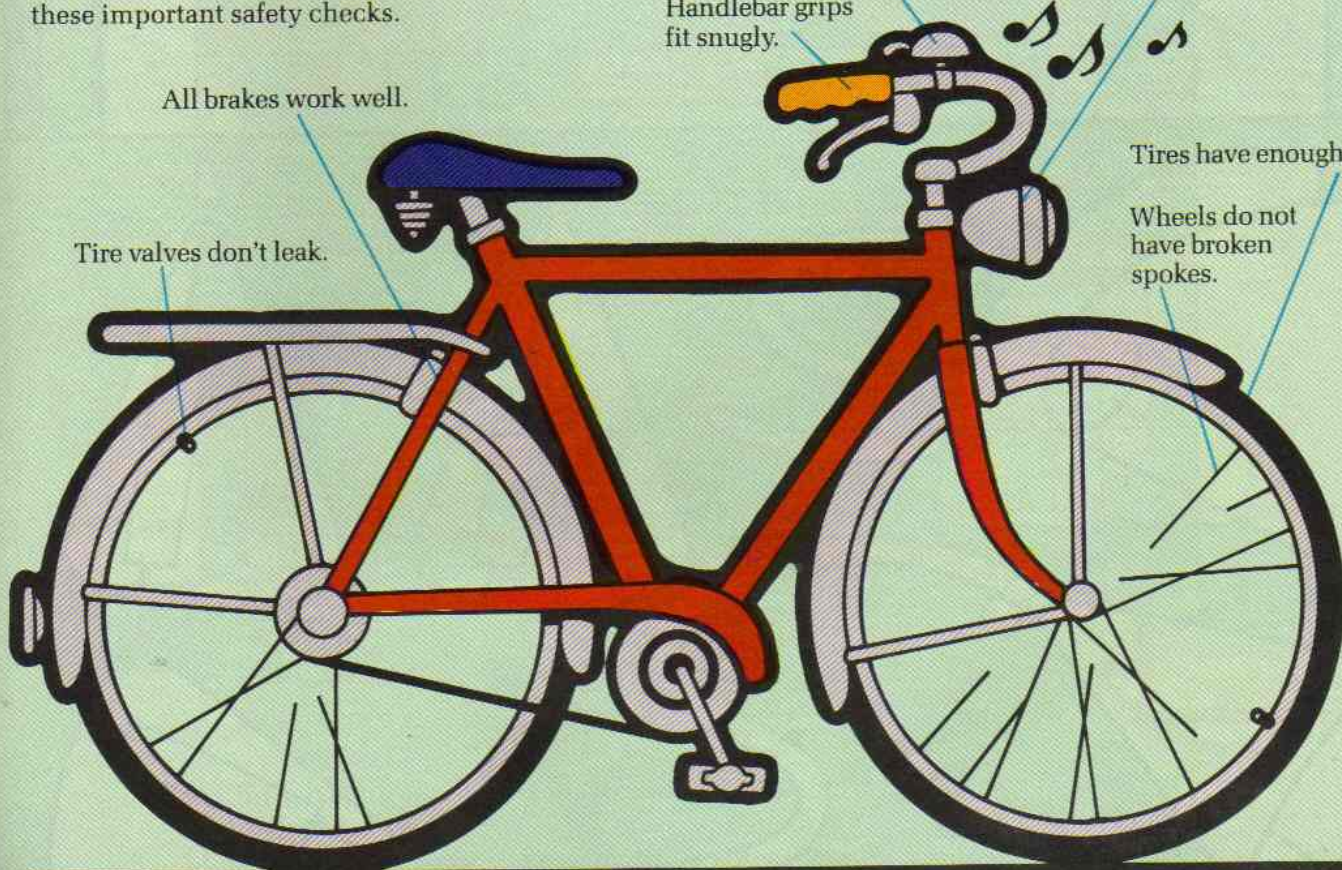
Handlebar grips fit snugly.

All brakes work well.

Tire valves don't leak.

Tires have enough air.

Wheels do not have broken spokes.



ILLUSTRATIONS BY SHELLY THORNTON

Listening Tube

A doctor uses a stethoscope to listen carefully to your heart. You can make something which will help you hear through walls and listen to soft sounds, too.

What You Need

2 funnels
rubber tubing (you might
cut up an old hose)
tape or glue

What You Do

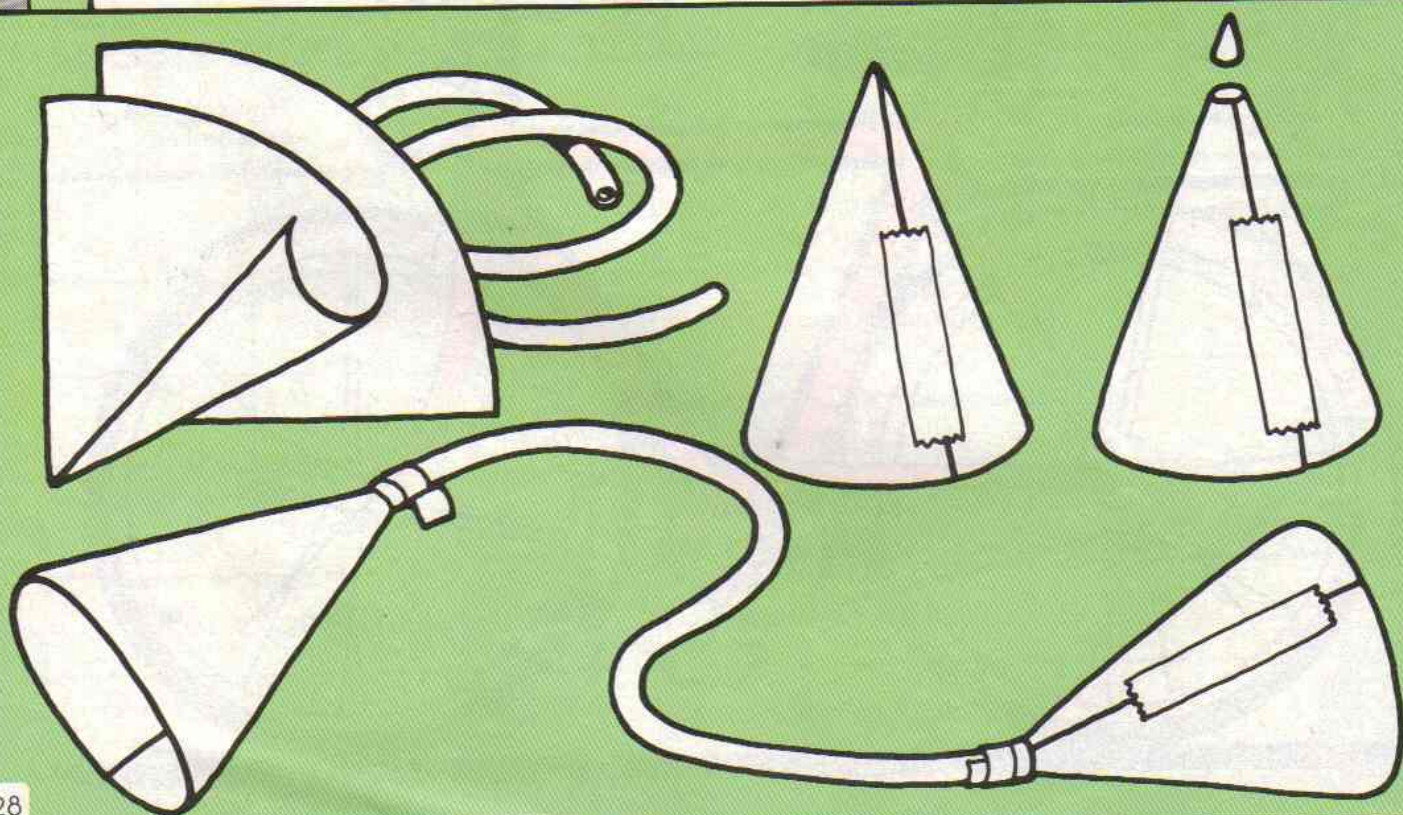
1. Tape or glue your two funnels to the tube. If your rubber tube is very long, you might want to cut off a smaller piece before you start.
2. Put one funnel up to your ear and the other one against the thing you want to listen to. You could try it against the wall. Or you could

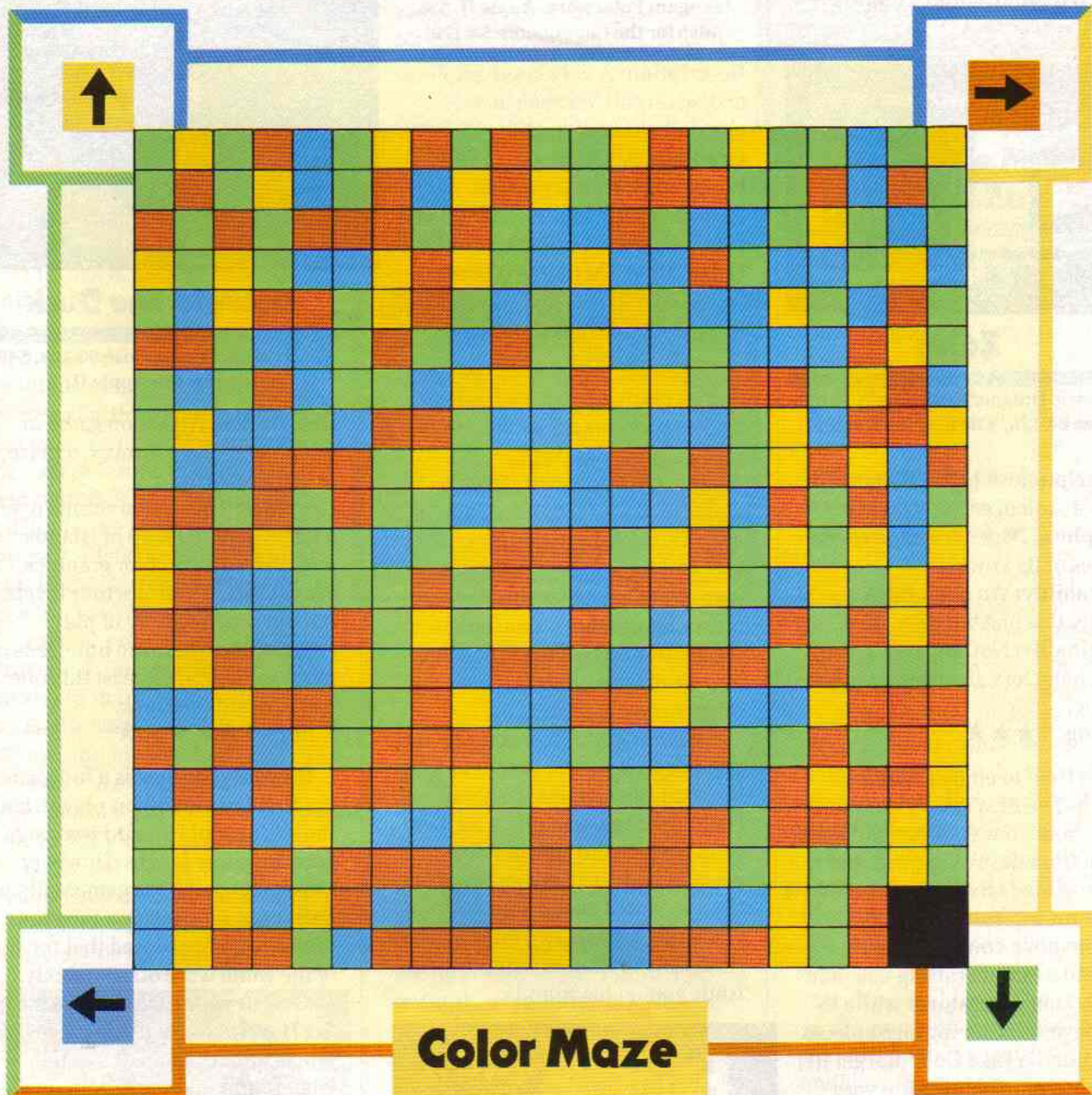
listen to the back of a clock, or to your friend's heartbeat.

3. If you don't have funnels and a tube, you can make them. To make a funnel, cut out a six inch by six inch square of paper. Cut off one corner along a curved line. (See picture) Roll the paper into a cone shape and tape it closed. To make the tubing, just roll up a long piece of paper. Cut a piece off the tip of the funnel big enough for the tube to fit it. Tape them together and there you have it!

Why It Works

The funnel and the tubing *amplify* the sounds, or make them louder. The first funnel picks up the sound right through the wall. It catches the sound the same way your ear does. The sound is then passed through the tube and into your ear.





Color Maze

To solve this maze you must travel from the top row of boxes to the black box in the lower right-hand corner. You can start in any box in the top row. But you can only move in one

direction, depending on the color of the box you're in. Green means move down one box, yellow means move up one box, blue means left and red means right. **Answer on the Did It! page.**

REVIEWS

by Phil Wiswell and Bill Gillette

All software is rated on a scale of one to 10, based on Phil and Bill's overall reaction. A rating of 10 is the very best.



Zoids

(Electric Dreams/Activision, Commodore 64/128, \$30; also for Apple II)

Description: A battle game with lots of violence and little value.

Graphics: Poor compared to other games of its kind.

Playability: We don't think you'll replay this one too often. Boring!

Originality: Nothing new except the characters, licensed from the comic.

Rating: 3 ★★★★★

We tried to enjoy *Zoids*, but failed. The idea is very simple—you shoot your enemies and keep them from destroying you. But the game is made too complicated by a lot of unnecessary extras.

You move your character around a large scrolling map and battle enemy creatures while locating and retrieving eight pieces of Zoidzilla (like Godzilla, get it?).

The joystick moves are very hard to figure out just by playing the game. You have to read the manual to learn everything in this game. In such a simple shoot-em-up, learning to play should also be simple. This game only pretends to offer a variety of challenges.

The Coveted Mirror

(Penguin Polarware, Apple II, \$18; also for the Commodore 64/128)

Description: A very good graphics/text adventure through an enchanted world of magic.

Graphics: Appealing high-resolution graphics of each scene.

Playability: Intriguing and fun to play over and over again.

Originality: This game is several years old, but it's been spiced up.

Rating: 8 ★★★★★★★★

The object of this fascinating and difficult adventure game is to locate and bring back a missing piece of a magical mirror. It is a noble quest and mostly free of violence. In order to succeed, you must wander through the countryside and towns, mapping your way and solving puzzles. You will meet a lot of other characters in the game, and half the fun is figuring out who they are and how they relate to one another.

A neat angle to this game is that you have a limited amount of time to accomplish your tasks. You begin the game in a prison cell, as sand trickles through an hourglass. Whenever the sand runs out, the guard will check your cell. Once you escape, you must return from time to time so that the guard finds you on his rounds.



Howard The Duck

(Activision, Commodore 64/128, \$40; also for the Apple II)

Description: An action game in which you move through a maze on a treasure hunt.

Graphics: The screen scrolls over a large, detailed map of islands and water. Good color graphics.

Playability: There are four levels, but not much variety of play.

Originality: There are hundreds of maze games, but at least this one has Howard the Duck.

Rating: 5 ★★★★★

Howard the Duck is a fun game the first few times you play it, and the silliness of Howard is always good for a few laughs. However, the challenge of this game will not keep your interest for a long time. We were disappointed that the fun of the game wore off so quickly.

Most of your time is spent moving Howard through the mazes of jungle and rocks on one of the islands and in getting from one island to another via a sort of jet-pack. There are few treasures to be found, and most of the action involves defending yourself against characters who pop out of the ground and try to slow down your progress.

The Observatory

(CBS, Apple II, \$65; also for Commodore 64/128 and IBM PC)

Description: A computerized telescope and planetarium.

Graphics: Good, clear and easy to read.

Playability: Not a game, but you'll use it for as long as you own your computer—if you enjoy astronomy.

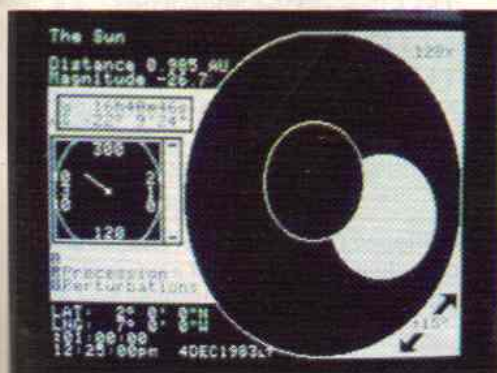
Originality: One of the best astronomy programs.

Rating: 9 ★★★★★★★★

This disk is packed with interesting activities and it is easy to learn how to control the program. First, you will enter coordinates of longitude and latitude for any point on Earth as well as a time and date. You can pick any time in the past or future over a 10,000 year period. After a minute's calculations, the program displays the stars, planets, and other objects in the sky for the time and location you chose.

And that's not all. Simple keystrokes can take you forward or backward in time, draw lines between the stars that form constellations, and much more.

Historical exercises are lots of fun. For example, we went back in time to old Vienna to experience the eclipse of March 16, 1485. And we followed the path of Halley's Comet for quite a while. If you like the stars, this is a sure winner.



Where in The U.S.A. Is Carmen Sandiego?

(Broderbund, Apple II, \$45; also for the Commodore 64/128 and IBM PC)

Description: A detective game in which you track down suspects around the United States.

Graphics: Excellent; just right for this kind of game.

Playability: Play as often as you like—you will never master it.

Originality: Same as *Where in The World Is Carmen Sandiego?*, except done with U.S. geography.

Rating: 10 ★★★★★★★★



At the beginning of each game, a crime has taken place in a U.S. city. The suspects are always the members of Carmen Sandiego's gang. Your job is to track the suspect and gather enough clues to guess his or her identity.

As you play, you feed information into your "crime computer." The computer will narrow down your list of suspects depending on the information you put in. For example, if you find a ticket to a "Knicks" game, you might guess that the criminal's favorite sport is basketball.

Fodor's U.S.A. travel guide is included with the game, and you use it to find out where the suspect is going. This is the best thing about this game—it's not only a great mystery, but you use real information to solve it.



The Movie Monster Game

(Epyx, Commodore 64/128, \$34.95; also for Apple II and IBM)

Description: You get to be one of six movie monsters.

Graphics: Fair, not too exciting.

Playability: A very funny idea, but gets boring quickly.

Originality: The idea is great! The game is no big deal.

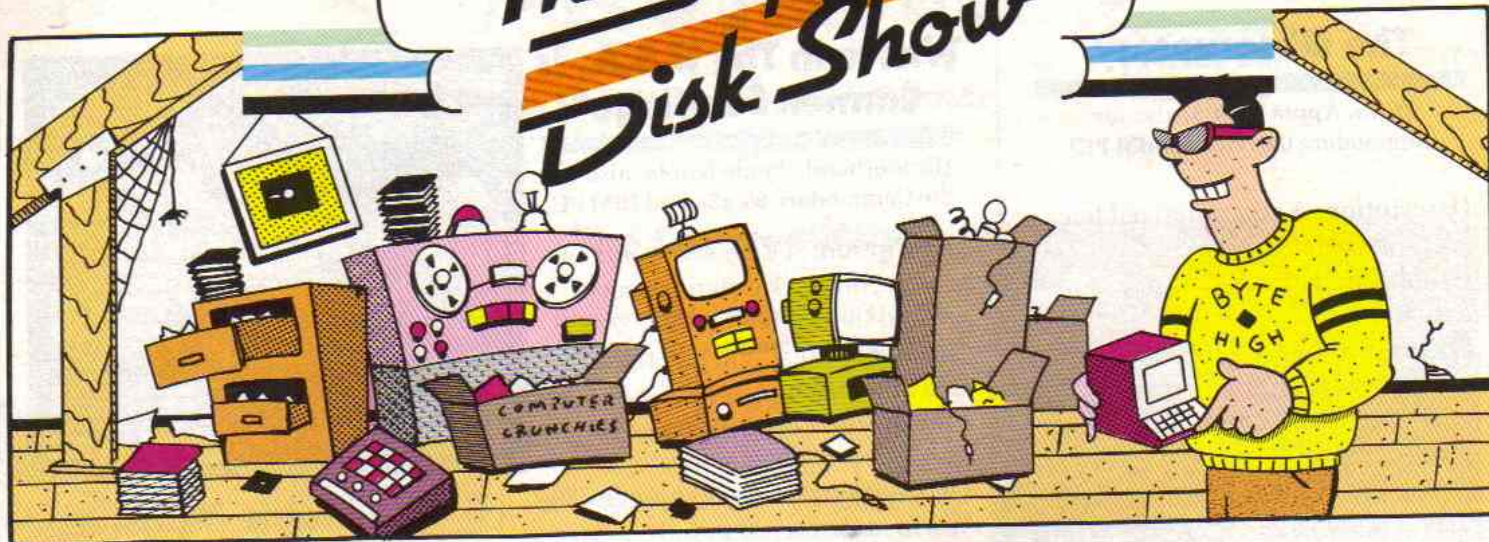
Rating: 5 ★★★★★

We really loved the opening of this game. At the start you get to choose one of six monsters, including Godzilla, the Glog (like the Blob) and a robot called Mechatron. You can pick one of six cities to attack, and you select your mission, which might be to destroy everything in sight, rescue a little monster, or just escape.

You control your monster as it roams the streets of the city. The idea is a lot of fun, and we enjoyed the game for a while. (Especially when we got to tear down the Empire State Building.) The problem is, the game is not that challenging. Although the text is funny, and the monsters are cute, we think most players will get bored with this after a couple of hours.

Phil Wiswell, father of three, is a computer consultant and writer. Bill Gillette, age 16, is a student with a passion for computers.

The Slipped Disk Show



ILLUSTRATIONS BY CAMERON EAGLE

Hi, all you computer cowboys out there. It's spring, and it's time for spring cleaning! That's why I'm up here in my attic, throwing out all the old junk I've collected during my years as a famous computer expert and floppy disk jockey.

Now here's something—my very first computer! I remember the day I found it at the bottom of a box of my favorite breakfast cereal—Sugar Snap Honey Sweet Computer Crunchies. Now that was a great computer, even if it was made out of cardboard.

Speaking of computers, let's get to our first question, which is from **Eve Ewing**, 11, of Chicago, Illinois. Eve asks:

"Why do some computers have one disk drive and others have two?"

Eve, my old Sugar Snap Honey Sweet Crunchies computer didn't have one disk drive. To play a video game, you had to cut a coupon off the back of the box and send it in with 50 cents. Then they'd write back and tell you what your score was.

Of course, nowadays, most software comes on disks. And most computers can be connected to either one or two disk drives. Most of the time, you don't need two disk

drives to play a computer game, or to use a word processing program or any other kind of software. But often having two drives makes things a lot easier. Otherwise, with some programs, you'll wind up switching disks every 10 seconds.

Speaking of disks, I just found my old teething disk! Boy, I used to chew on this thing for hours, back when I was a baby. Gee, I can't throw that out. And look at this, my collection of *Fantastic Computer Heroes of the Entire Galaxy* comic books! I've got every issue except for number seven. My dog, Floppy, ate that one.



Well, Floppy didn't eat the next letter, which is from **Laura Strauss**, 12, of Valley City, Ohio. Laura wants to know:

"Will computers ever replace teachers?"

Laura, more and more schools are using computers, and I'd bet that by the year 2000 they'll be in almost every classroom. But I doubt that teachers will ever be replaced by computers or any other electronic device. Computers are just a tool that can help you learn, like a textbook or a slide projector. They can't answer all the different questions that students have and explain things the way a teacher can.

And that's the last question I can answer this month. I'm going to see what other neat stuff I can find up here. Good thing I never throw anything out. Don't forget to send your computer questions to:

The Slipped Disk Show
3-2-1 CONTACT Magazine
1 Lincoln Plaza
New York, NY 10023

See ya next month!

The Slipped Disk Show prevents tooth decay when used as part of a properly applied program of oral hygiene.

Goldilocks and The Three Bears

A FRACTURED FLOWCHART FAIRY TALE

Retold by Richard Chevat

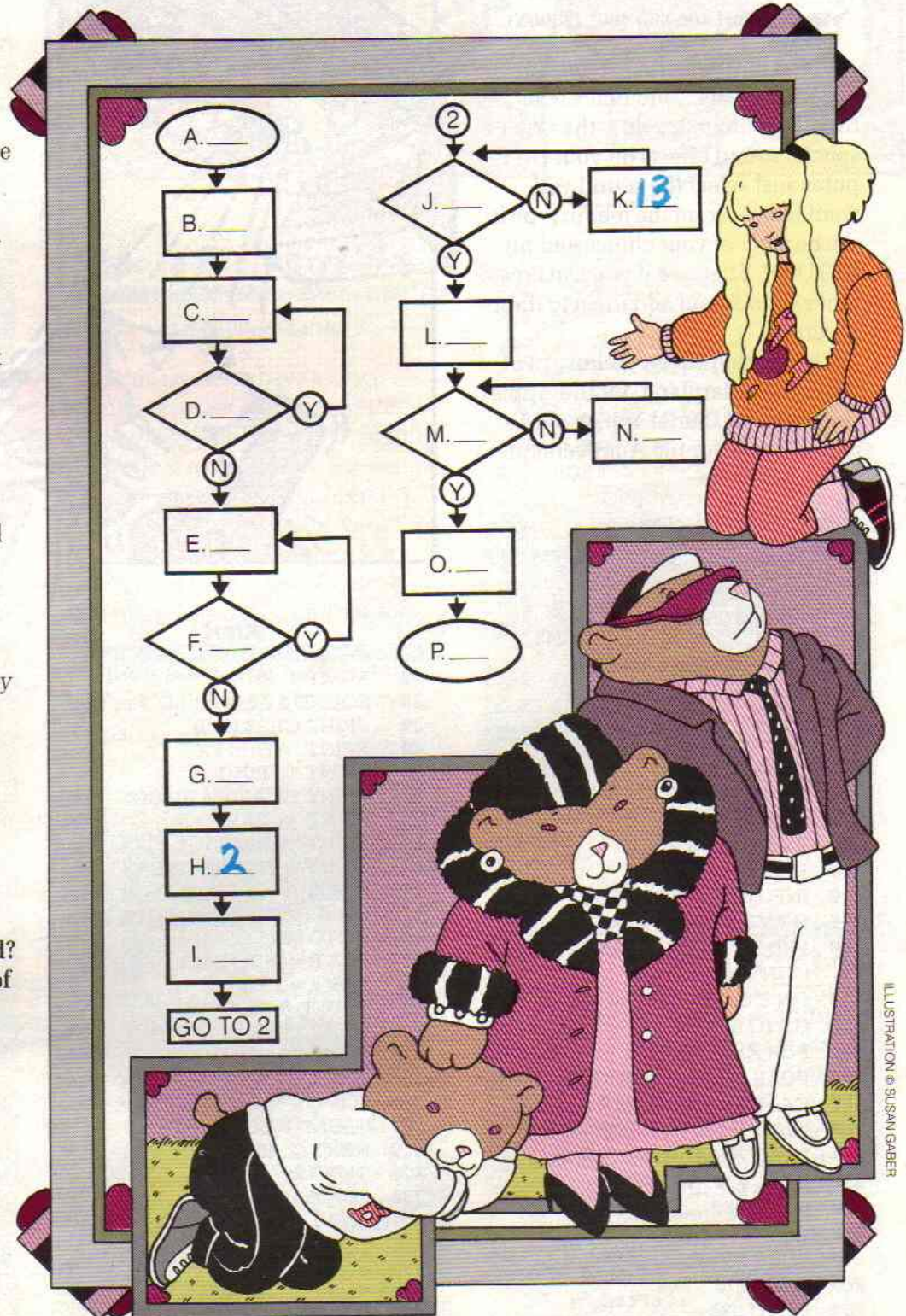
When we sat down to remember the story of *Goldilocks and the Three Bears*, we came up with three different versions. One was too long, one was too short and the third was just right. The only problem is that it got a little mixed up. Can you straighten it out?

Each sentence belongs in one of the boxes in the flowchart. Just put the number of the correct sentence in each box. We've done two to get you started.

The story should start at the top and follow the direction of the arrows. Remember, diamond-shaped boxes are for questions.

Have fun, but please use your own copy of the magazine. Otherwise, you might hear a deep voice say, "Someone's been writing in my 3-2-1 CONTACT."

1. Is someone sleeping in bed?
2. Bears return
3. Bears live happily ever after
4. Goldilocks goes to sleep
5. Bears look in next bed
6. Goldilocks comes to bears' cottage
7. Is porridge too hot or too cold?
8. Bears chase Goldilocks out of cottage
9. Bears look in first bed
10. Once upon a time...
11. Goldilocks lies on bed
12. Is the porridge all gone?
13. Bears look at next bowl
14. Is bed too hard or too soft?
15. Goldilocks tastes porridge
16. Bears look in first porridge bowl



Answer on the Did It! page.

BASIC TRAINING

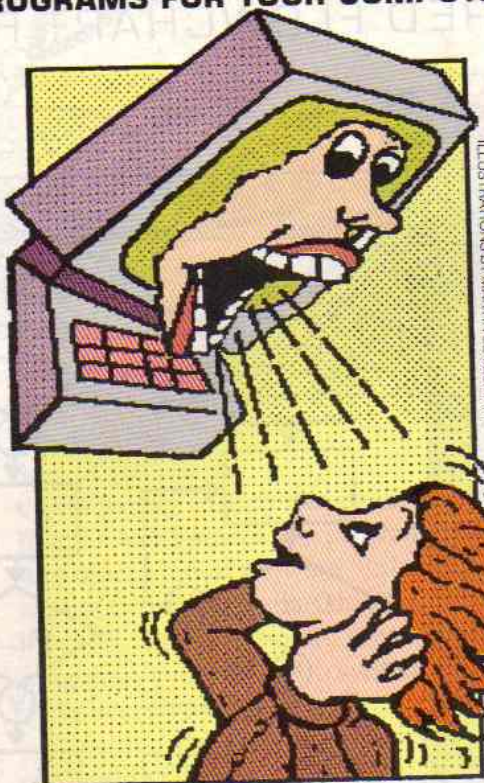
PROGRAMS FOR YOUR COMPUTER

First Rate FX

Apple, Atari 400/800 400XL/800XL

In Hollywood, "FX" stands for "special effects," and that's what these two programs do—they create special sound effects on your computer. Just select the sound you want to hear from the menu, type in the number of your choice and hit RETURN. Then see if you can create other sounds and add them to these programs.

Thanks to **Andrew Helms**, 13 of Baltimore, Maryland, for the Apple program and **Daniel Top**, 9, of Miami, Florida, for the Atari version.



ILLUSTRATIONS BY MARTIN LEMELMAN

Apple

```

10 ONERR GOTO 60
20 DATA 173, 48, 192, 136, 208, 5,
   206, 1, 3, 240, 9, 202, 208, 245,
   174, 0, 3, 76, 2, 3, 96
30 FOR I=770 TO 790
40 READ J: POKE I,J
50 NEXT I
60 HOME
70 PRINT "APPLE FX"
80 PRINT "1-ZAPPO"
90 PRINT "2-WACCO"
100 PRINT "3-EXIT"
110 INPUT "YOUR CHOICE?"; C
120 HOME
130 PRINT "TO END NOISE PRESS
   CONTROL-C"
140 ON C GOTO 160, 230, 270
150 GOTO 60
160 FOR X=1 TO 100
170 POKE 768, X: POKE 769, 4
180 CALL 770: NEXT X
190 FOR Y=100 TO 1 STEP -1
200 POKE 768, Y: POKE 769, 4
210 CALL 770: NEXT Y
220 GOTO 160
230 P=INT(RND(1)*255)+1
240 POKE 768, P: POKE 769, 5
250 CALL 770
260 GOTO 230
270 HOME: END
    
```

Atari

```

10 REM FX
20 SOUND 0,0,0,0
30 PRINT CHR$(125)
40 PRINT "ATARI FX"
50 PRINT "1. PING"
60 PRINT "2. ALIEN DISCO"
70 PRINT "3. ZAP"
80 PRINT "4. EXIT"
90 PRINT "CHOOSE ONE"
100 INPUT A
110 ON A GOTO 130, 180, 230, 290
120 GOTO 90
130 FOR B=15 TO 0 STEP -0.8
140 FOR X=1 TO 7
150 SOUND 0, 60, 10, B
160 NEXT X: NEXT B
170 GOTO 20
180 FOR X=1 TO 3
190 FOR C=500 TO 0 STEP -0.8
200 SOUND 0, 60, 10, C
210 NEXT C: NEXT X
220 GOTO 20
230 FOR X=1 TO 20
240 FOR Y=1 TO 5
250 FOR Z=1 TO 3
260 SOUND 0, Y*10+Z*2.10, Y*Z
270 NEXT Z: NEXT Y: NEXT X
280 GOTO 20
290 END
    
```

Probability Pegs

TI 99/4A

You've probably never seen a program like this before. When you run it, colored balls drop down the screen through a series of "pegs." Each time a ball "hits" a peg it has a 50 percent chance of falling to the left or the right. A ball could fall to the right every time, or it could fall to the left every time. But with most balls, the lefts and rights even out and they wind up near the middle. That's how this program demonstrates the law of probability.

Michael Wasserman, 19, of Chicago, Illinois, took a chance and sent this program to us.

```

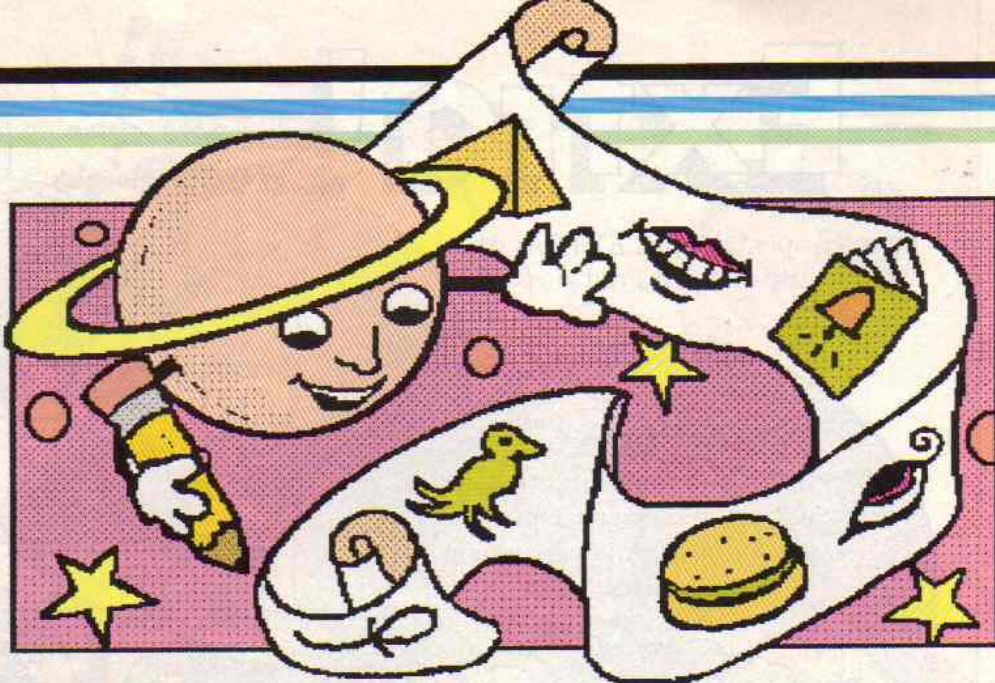
10 CALL CLEAR
20 CALL CHAR
   (33,"00003C3C3C3C")
30 FOR J=1 TO 13 STEP 2
40 FOR I=1 TO 31 STEP 2
50 CALL HCHAR(J,I,33)
60 NEXT I
70 NEXT J
80 FOR J=2 TO 14 STEP 2
90 FOR I=2 TO 30 STEP 2
100 CALL HCHAR(J,I,33)
110 NEXT I
120 NEXT J
130 FOR U=64 TO 159
140 CALL CHAR
   (U,"3C7EFFFFFF7E3C")
150 NEXT U
160 FOR F=5 TO 16
170 CALL COLOR(F,F,1)
180 NEXT F
190 CALL HCHAR(18,5,32,21)
200 OLC=1
210 ROW=2
220 COL=17
230 X$=STR$(X)
240 FOR D=1 TO LEN(X$)
250 H=ASC(SEG$(X$,D,1))
260 CALL HCHAR(3,4+D,H)
270 NEXT D
280 RANDOMIZE
290 CYT=INT(96*RND)+64
300 CALL HCHAR(ROW-1,OLC,32)
    
```



```

310 CALL HCHAR(ROW,COL,CYT)
320 IF ROW = 24 THEN 490
330 CALL GCHAR
(ROW+1,COL,W)
340 OLC = COL
350 ROW = ROW + 1
360 IF W = 32 THEN 310
370 B = INT(2*RND) + 1
380 IF B = 2 THEN 440
390 CALL GCHAR(ROW,COL+1,W)
400 IF W > 33 THEN 490
410 IF W <> 32 THEN 470
420 COL = COL + 1
430 GOTO 300
440 CALL GCHAR(ROW,COL-1,W)
450 IF W <> 33 THEN 490
460 IF W < 32 THEN 390
470 COL = COL - 1
480 GOTO 300
490 X = X + 1
500 CALL SOUND(50,760,1)
510 IF X < 90 THEN 210
520 FOR D = 1 TO 2000
530 NEXT D

```



Space Hieroglyphics

Commodore 64/128

In this issue we have a story about a teenager who solved the mystery of some Maya hieroglyphics. Well, we dare you to figure out what these strange symbols mean. Are they a Martian phone book? A fast food menu from Jupiter? Or a grocery list from Alpha Centauri? Just run this program and see for yourself.

This message was brought to you by **Paul Slocum**, 11, of Richardson, Texas.

```

10 PRINT CHR$(5)
20 Y = 100: X = 100
30 POKE 53281, 0: POKE 53280, 0
40 PRINT CHR$(147)
50 V = 53248
60 POKE V + 21, 255
70 FOR A = 0 TO 7
80 POKE 2040 + A, 13: NEXT A
90 FOR A = 0 TO 7
100 POKE V + 39 + A, A: NEXT A
110 POKE V + 4, 100: POKE V + 5, 100
120 FOR A = 0 TO 62
130 POKE 832 + A, 255: NEXT A
140 FOR F = 1024 TO 2023
150 Q = INT(RND(1)*127) + 128
160 POKE F, Q: NEXT F
170 FOR A = 0 TO 15
180 POKE V + A, 100 + A: NEXT A
190 A = INT(RND(1)*4) + 1

```

```

200 ON A GOTO 210, 220, 230, 240
210 X = X + 2: GOTO 250
220 Y = Y - 2: GOTO 250
230 Y = Y + 2: GOTO 250
240 X = X - 2
250 Q = INT(RND(1)*8)
260 POKE 53270, 88 + Q
270 POKE V + 4, Y: POKE V + 5, X
280 G = INT(RND(1)*15)
290 H = INT(RND(1)*999) + 55296
300 POKE H, G
310 P = H - 55296 + 1024
320 POKE P, PEEK(P - 128)
330 U = U + 1: IF U = 5 THEN U = 0:
GOTO 350
340 GOTO 190
350 I = I + 2
360 IF I > 15 THEN I = 0
370 POKE V + 1, Y: POKE V + I
+ 1, X
380 GOTO 190

```

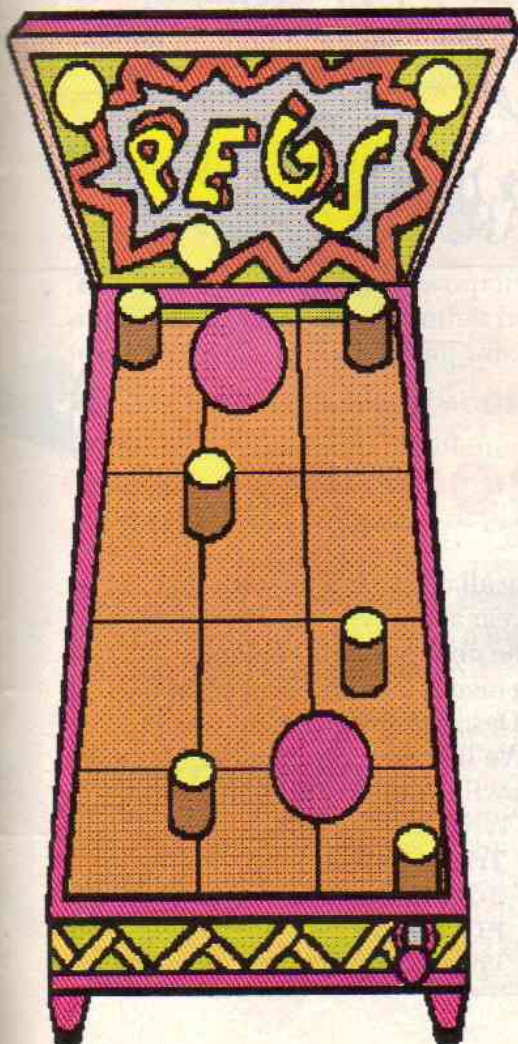
Send Us Your Programs

If you've written a program you'd like us to print, send it in. Include a note telling us your name, address, age, T-shirt size and type of computer. If we like it, we'll print it and send you \$25.

All programs must be your own original work. We cannot return programs. Please do not send disks.

Send your program to:

Basic Training
3-2-1 CONTACT Magazine
1 Lincoln Plaza
New York, N.Y. 10023



Extra!

by Ellen R. Mednick

Here's a special April EXTRA! filled with plenty of April Fool surprises.

Funny Farm

Find all the things that are wrong on our weird and wacky farm. Answers are on the Did It! page.



APRIL
CONTEST

FOOL'S

Calling all class clowns—it's that time of year again! We want to know what's the neatest April Fool joke (nothing mean) that was ever played on you. Describe the gag in 50 words or less. We'll choose our favorites. Winners will receive CONTACT T-shirts. Write to:

Trick Contest
3-2-1 CONTACT
P.O. Box 40
Vernon, NJ 07462

Table Talk

Place a penny on the table (right). Make sure it doesn't touch any of the lines. Piece of cake, huh? Plenty of room, right? Try again! Happy April Fool's Day!



ILLUSTRATIONS BY LYN HUNTER

Sneaky Snake

With a little scientific know-how, plus some magic, you can make a snake mysteriously pop out of your pocket.

What You Need:

- A 4-inch piece of plastic wrap that can stretch
- A paper clip

1. Hold one corner of the wrap in one hand. Twist the opposite corner with your other hand. Wind it tightly just like a rope. (See Drawing One.)

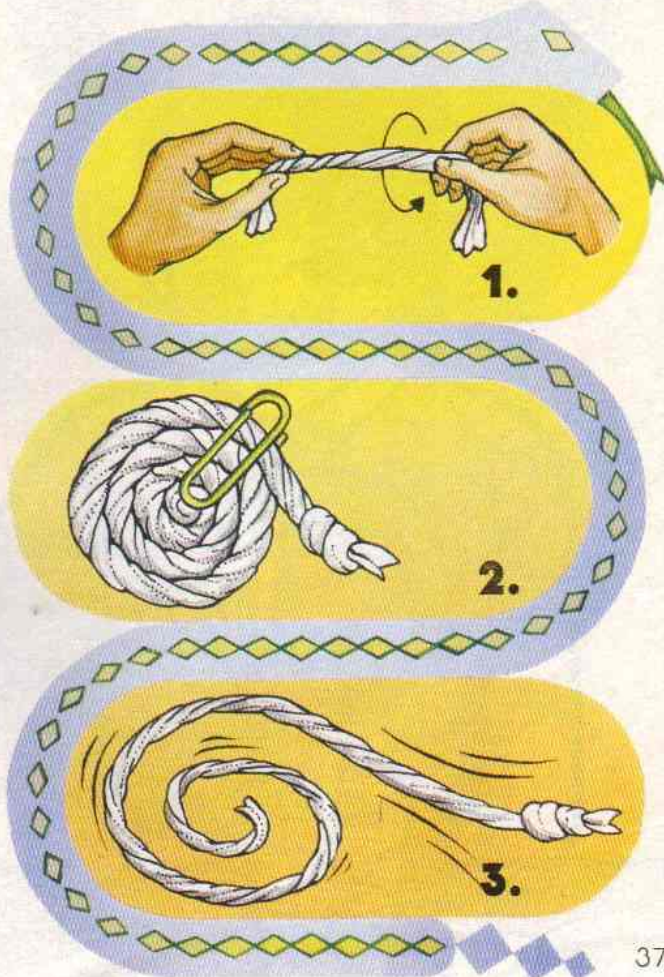
2. Tie a knot at one end. That's the snake's head.

3. Starting from the end without the knot, coil the snake so it's flat and round. (Don't let it unwind.) Use a paper clip to keep the snake in place. (See Drawing Two.)

4. Put the snake in your pocket. Just before you make the snake appear, remove the paper clip. Then quickly take out the snake and release it.

Why it happens:

Everything that moves has *kinetic energy* or energy of *motion*. Sometimes energy is stored and becomes kinetic energy later. That's called *potential energy*. For example, when a spring is wound tight, it has potential energy. Once it's released, it has kinetic energy. That's what made your magic snake move.



Experiment

Growing Crystals

You can start your own funny farm right inside your home. It's easy—just grow some crystals! Some of the most common items around your house are crystals. Here's how to "raise" beautiful crystal shapes in water.

What You Need

salt	2 pencils
sugar	2 paper clips
water	string or thread
a spoon	tape
a small pot	measuring cup
2 glasses	

What You Do

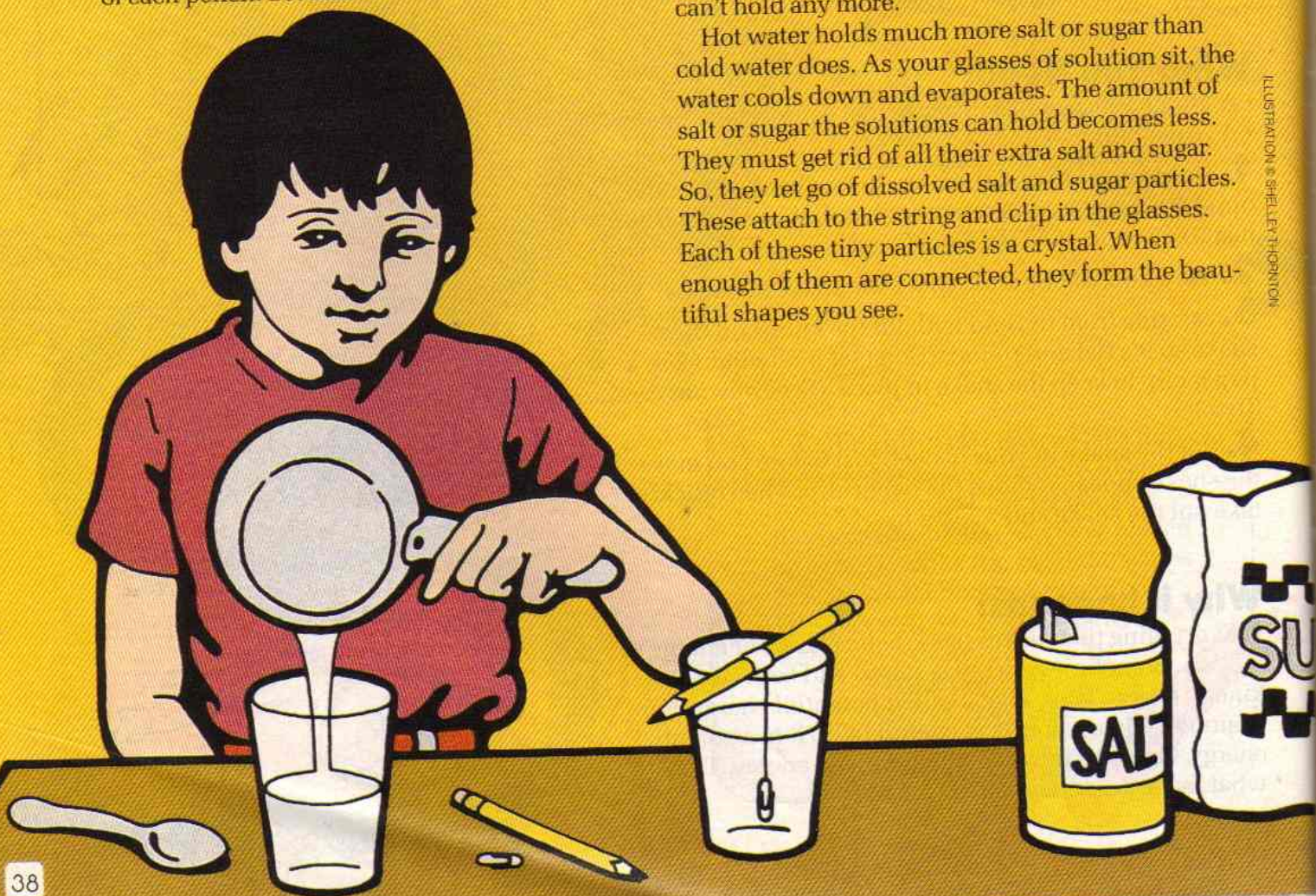
1. Tie pieces of string to ends of clips.
2. Tape the other end of each string to the middle of each pencil. Set aside.
3. Boil a cup of water. Remove pot from heat.
4. Stir in sugar a few teaspoons at a time, until no more will dissolve. You'll need between one and two cups of sugar.
5. Pour the sugar water into one of the glasses. Hang the string in the glass as you see in the picture. Don't move the glass.
6. Repeat steps #3, 4 and 5, using salt instead of sugar. (The salt water will not be as clear as the sugar water.)
7. After a while you should see sugar and salt crystals forming around the string and clip in each glass. Be patient, especially with the sugar. It can be two to three weeks before crystals form.

Why It Works

When you dissolve loads and loads of salt or sugar in water, you create a solution that is saturated. The water is so filled up with salt or sugar that it can't hold any more.

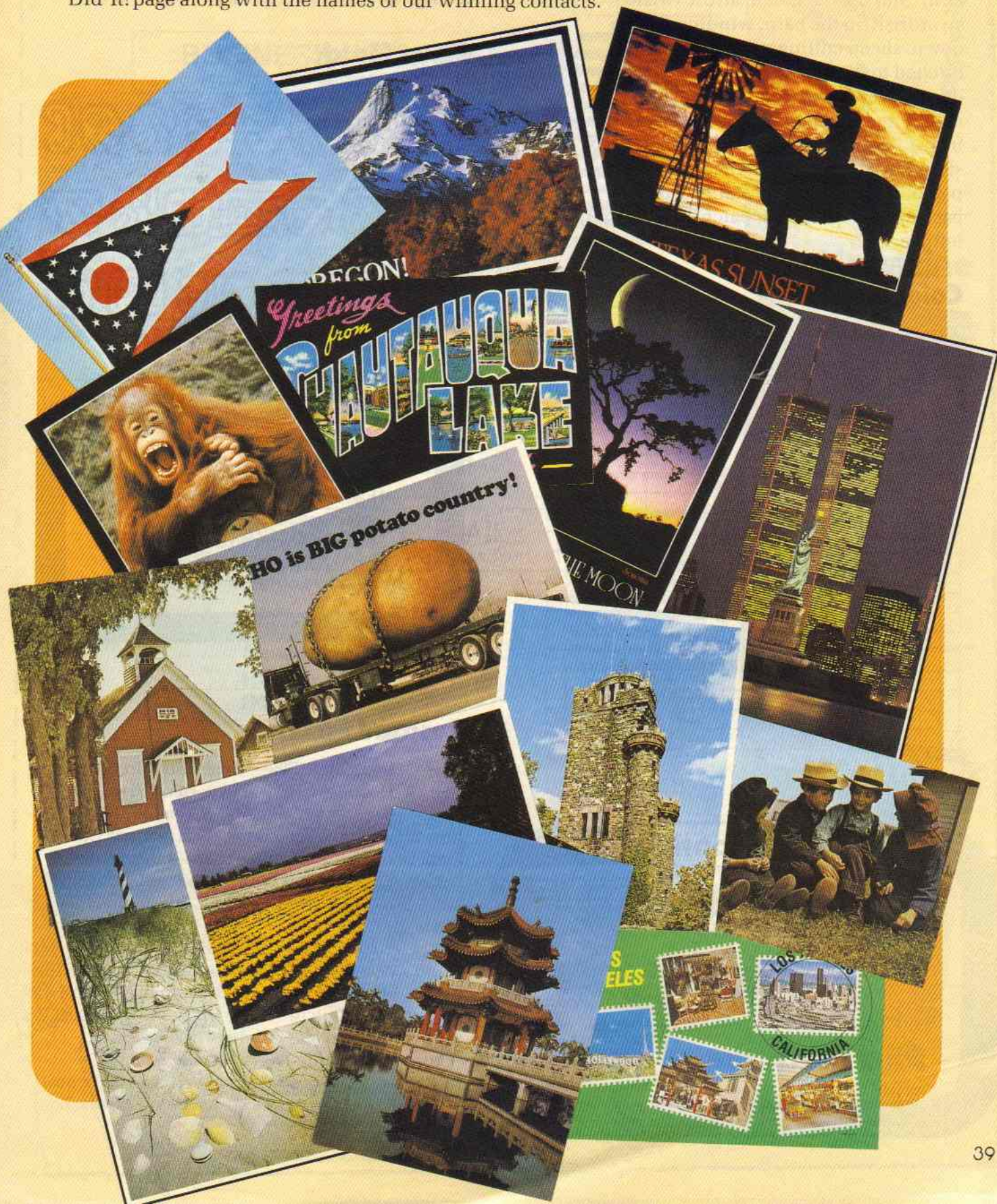
Hot water holds much more salt or sugar than cold water does. As your glasses of solution sit, the water cools down and evaporates. The amount of salt or sugar the solutions can hold becomes less. They must get rid of all their extra salt and sugar. So, they let go of dissolved salt and sugar particles. These attach to the string and clip in the glasses. Each of these tiny particles is a crystal. When enough of them are connected, they form the beautiful shapes you see.

ILLUSTRATION © SPENCER THORNTON



Mail

Postcard Puzzler Thanks for all the terrific collector postcards you sent us! Here are some of our favorites. Can you figure out where these places are? Answers are on the Did It! page along with the names of our winning contacts.

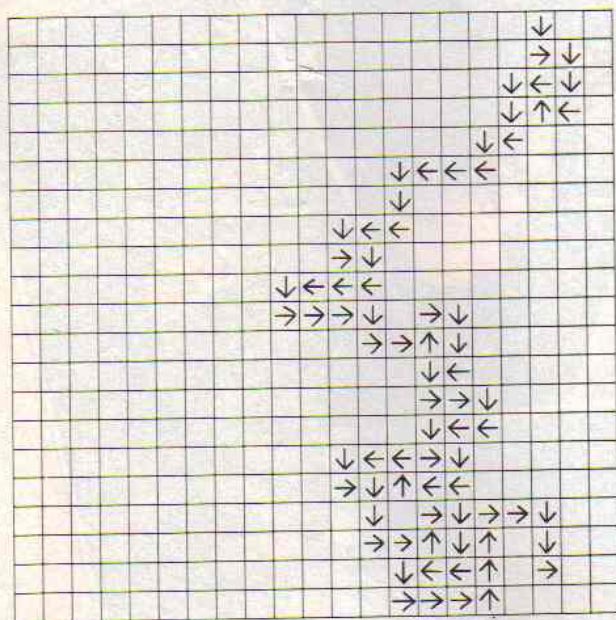


Did It!

Funny Farm

Here are some things that are wrong on our farm: Silo upside down, arrow twisted, swordfish on the barn, window upside down, sheep cutting man's hair, horse hitched to the wagon the wrong way, cow driving tractor, boy milking pig, watermelon tree, bananas on cornstalk, snowman instead of scarecrow, turnips growing upside down, sheep's head in cauliflower patch, dog on roof, chick sitting on egg, basketball in pumpkin patch, rose bush in lettuce.

Color Maze



Next Month!

Big Buildings

A short history of skyscrapers.

Growing Old

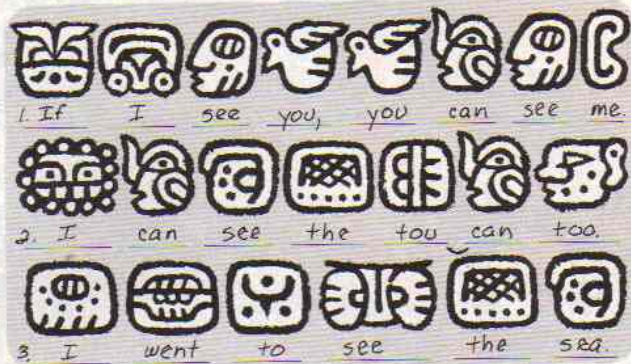
You're never too old to ski
or to be a marathon runner.

Plus much, much more.

Fractured Flowchart

A. 10, B. 6, C. 15, D. 7, E. 11, F. 14, G. 4, H. 2,
I. 16, J. 12, K. 13, L. 5, M. 1, N. 9, O. 8, P. 3.

Maya Match



Thank You!

Thanks to our student intern Sally Rose, Fran Rosencrantz and the School of American Ballet for their help in putting this issue together.

Postcard Puzzler

Row 1. Ohio's State Flag—Bobby Stewart, Plain City, OH; Mt. Hood—Melissa Vovvu, Hood River, OR; Texas Sunset—Marcelyn Staley, Denton, TX.

Row 2. San Francisco Zoo—Alicia Norgaard, San Francisco, CA; Chautauqua Lake—Libby Wales, Lakewood, NY; Valley of the Moon—Matt Payne, Kenwood, CA; World Trade Center—Beth Kaplan, Coram, NY.

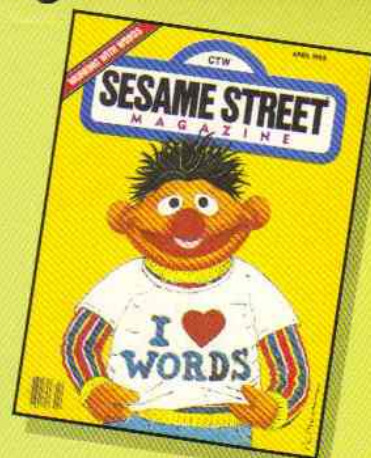
Row 3. Pioneer Village—Julie Boldt, Hollandale, MN; Idaho's Russet Potato—Michael Walker, Idaho Falls, ID; Lambert's Tower—Cerel Grimaldi, Paterson, NJ; Pennsylvania Dutch—Kathy Duffy, Philadelphia, PA.

Row 4. Cape Hatteras, Maine—Hilary Lease, Sugarloaf, PA; Tulip Fields—Brinna Thayer, Anacortes, WA; Taipei, Taiwan—Elizabeth Barnes, Ft. Smith, AK; Los Angeles—Rivka Moskovits, Los Angeles, CA.

LEARNING IS FUN ...

Sesame Street Magazine

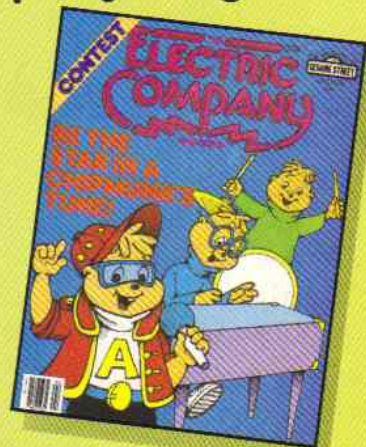
Big Bird and his delightful friends bring dozens of playful surprises, ten terrific times a year. (It's the entertaining education that Sesame Street does best!) Puzzles, cut-outs, games, A-B-C's, 1-2-3's, ...there's all the magic of the TV super-series in every colorful issue.



1 year (10 issues) for only \$10.95

The Electric Company Magazine

It's amusing, playful, absorbing, and educational for beginning and young readers ages 6 to 10. Enjoy ten colorful issues filled with puzzles, games, cut-outs, stories, jokes...and sunny smiles.



1 year (10 issues) for only \$10.95

3-2-1 Contact

An entertaining, informative adventure in science and technology for 8 to 14-year-olds. Each of CONTACT's ten big issues is packed with puzzles, projects, experiments, and colorful feature stories. PLUS a new ENTER computer section with programming, news and reviews. A fun, involving way to learn!



1 year (10 issues) for only \$11.95

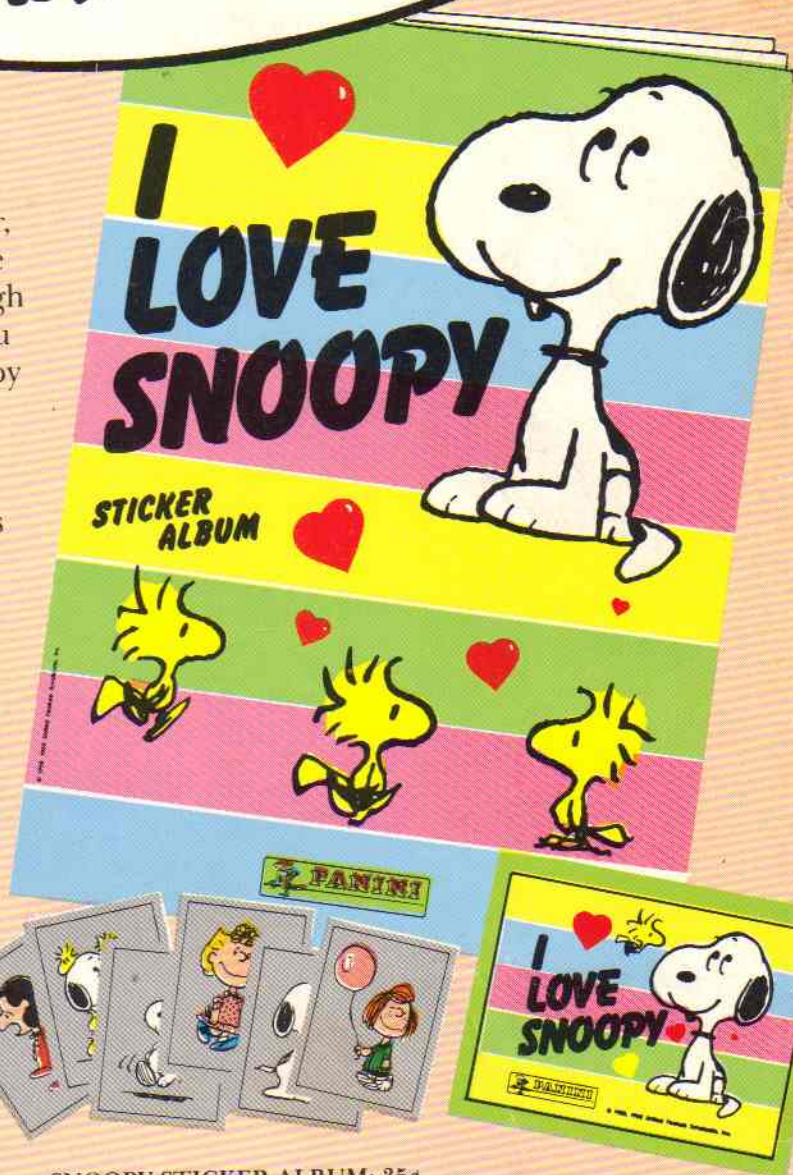
If the order card is missing, please send your order to:
Children's Television Workshop
One Lincoln Plaza
New York, NY 10023





HOORAY! THE NEW SNOOPY COLLECTOR'S ALBUM AND STICKER PACKETS ARE HERE!

It's Snoopy in all his glory.
Snoopy as the Flying Ace.
Snoopy, the fearless Beagle Scout.
Snoopy and his friends—Lucy, Schroeder,
Woodstock, Charlie Brown and the whole
wacky, wonderful Peanuts gang. All in high
quality, full color stickers by Panini. So you
can fill your album with wonderful Snoopy
adventures. And trade stickers with your
friends! So giggle with Snoopy, laugh
with Snoopy, play with Snoopy—as you
complete your Snoopy Sticker Album. It's
available now at your local store.



To help start your collection, we'll send you, absolutely free, the "I Love Snoopy" Sticker Album *plus* two sticker packets (each containing 6 stickers). Just fill in the coupon and mail it today.*

(Please Print)

MY NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

CHECK ONE:

☐ ☐
BOY / GIRL

Mail to: PANINI USA, INC. P.O. Box 5081 Dept. SXC
FDR Station New York, N.Y. 10150-5081

*Only original coupon (no copies) is valid for this special offer. Offer limited to the first 100,000 coupons. Offer expires June 30, 1987.
Void where prohibited. Please allow 6 weeks for delivery.

SNOOPY STICKER ALBUM: 35¢
EACH PACKET OF SIX STICKERS: 25¢



HAVE FUN WITH SNOOPY. STICK WITH PANINI.